VOL. 180 No. 1 AMERICAN JANUARY, 1954

Gas Journal

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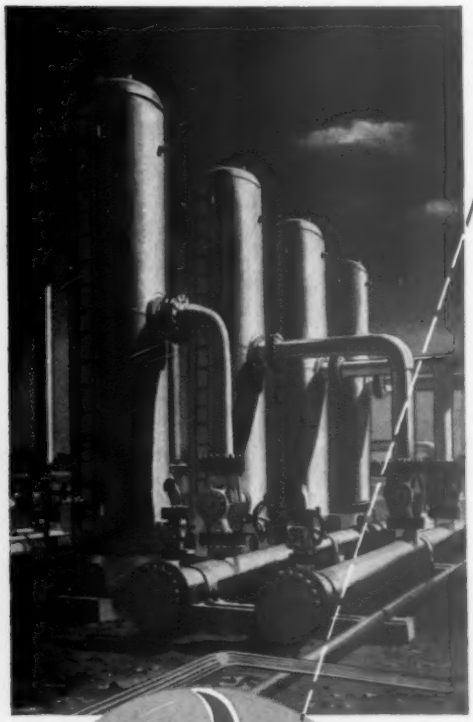
Pick up extra profits by selling Automatic heating with space heaters equipped with the new, streamlined *ROBERTSHAW®* 2-EC throttling type heat control. An adjustable by-pass set at the time of installation maintains a minimum flame over the main burner at all times, assures more even distribution of heat and continuous air circulation that helps overcome the "cold 70." Model 2-EC is equipped with a thermo-electric automatic pilot. Should pilot failure occur the magnet automatically releases and provides 100% shut off of all gas. *Write for full information.*

Robertshaw-Fulton

CONTROLS COMPANY

Robertshaw Thermostat Division
Youngwood, Pennsylvania

Dangerous Gas Leaks Ahead . . .



. . For the safety and protection of your gas system CALL ON THE CAPTAN MAN. He can recommend the *right* CAPTAN and the *right* method of introduction to provide you with the best in gas odorization.

That CAPTAN is the top material in its field is proved by its preference in the largest and most progressive plants in the world.

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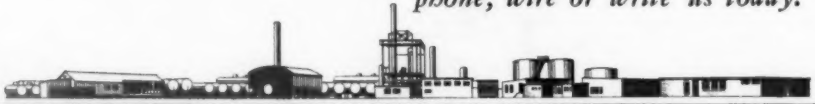

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MAR 12 1954

When you plan your water seal gas holder, REMEMBER:

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Koppers bid is based on 76 years of experience

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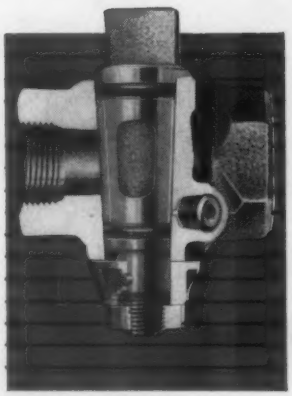
MUELLER

LubOseal gas meter stops...

Are doubly safe against leakage...

• LubOseal Stops have been pressure tested by Mueller's Engineering Department to 4800 p.s.i.g. without leakage.

• Synthetic rubber, gas-resistant "O" rings are used at both top and bottom of the key – providing positive assurance against leakage to the atmosphere.



• The bronze key is precision ground and lapped into the heavy cast iron body–preventing leakage through the port when the stop is in the closed position.

MUELLER CO.
Dependable Since 1857
MAIN OFFICE & FACTORY DECATUR, ILLINOIS

AMERICAN Gas Journal
ESTABLISHED 1859

VOLUME 180 JANUARY 1954 NUMBER 1

This month...

The officers, directors, stockholders and staff of AMERICAN GAS JOURNAL feel deeply the loss of Elliott Taylor's guiding hand and courageous spirit. His crusade for an expanding, aggressive gas industry, as expressed in his editorials campaigning for *a high sense of public responsibility by the industry . . . the continuing technological advancement of the industry . . . an industry-wide activation of an aggressive and truly competitive selling program by utilities and manufacturers alike.*

These three points are, in simple terms, the gas industry considerations to which Elliott Taylor's thoughts and efforts were devoted.

AMERICAN GAS JOURNAL, with nearly 100 years of service, will continue to be a vigorous force devoted to the best interest of the industry.

AMERICAN GAS JOURNAL will maintain and enlarge its currently-useful technical information to its readers.

AMERICAN GAS JOURNAL will continue its leadership in aggressive support and encouragement of the Gas Industry Development Program.

This, then, is our resolve: AMERICAN GAS JOURNAL *is dedicated to the advancement of the crusade to which Elliott Taylor was devoted.*

ROBERT M. POE
President

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Hilding H. Carlson · Managing Editor
Bernard W. Morris · News Editor
Charles R. Bellamy · Technical Editor
Arthur Rohman · Western Editor **John F. Falvey · Financial Editor**

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SAVE-A-VALVE DRILLING NIPPLE

The Mueller No-Blo Save-a-Valve Drilling Nipple with welding inlet and threaded outlet is used to make temporary connections to a main under pressure. Valve is removed and saved when connection is abandoned. The "E-4" Drilling Machine drills hole into main through nipple and inserts plug, permitting removal of valve.

HIGH PRESSURE STOP

The Mueller Bronze High Pressure Main Stop with threaded I.P. inlet and threaded inside or outside I.P. outlet in sizes ½" through 2" may be used with a service clamp. Mueller single and double strap service clamps are available for pipe 1" through 12" diameter. They are drilled and tapped in sizes from ½" through 2". The "E-4" Drilling Machine drills into the main through the opened stop and service clamp.

SERVICE TEE

The Mueller No-Blo Service Tee with welding or threaded inlet and welding, threaded or extended outlet is used for making connections under pressure to mains where a valve is not required but a means of future stop-off is needed. Sizes ¾" through 2". The "E-4" Drilling Machine drills a hole into the main through the Service Tee and makes future stop-offs with the rubber stopper or steel shut-off tool. The tee comes complete with plug and completion cap.

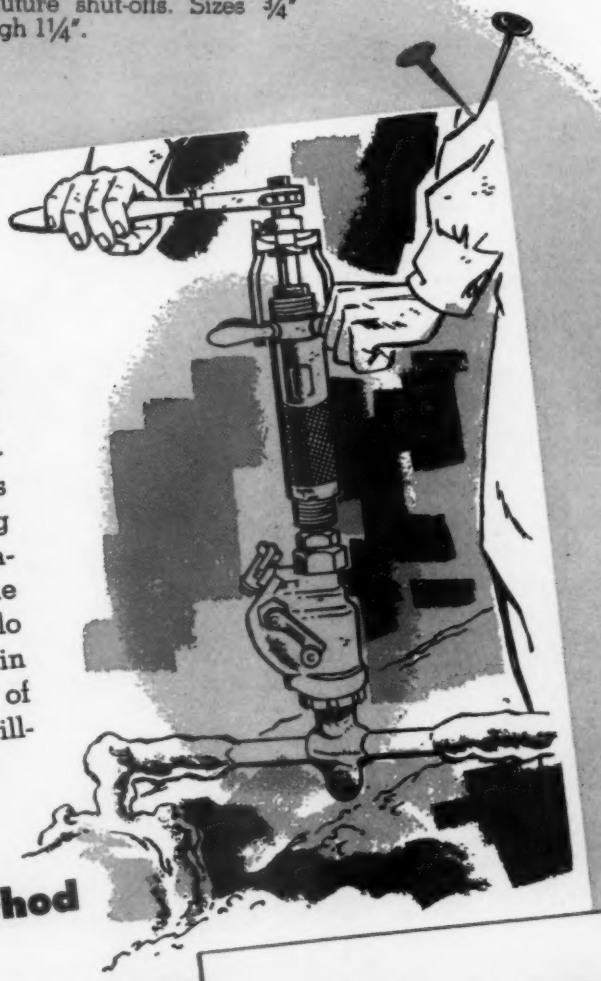
MUELLER No-Blo Fittings used with the Mueller "E-4" Drilling Machine

LINE STOPPER FITTING

The Mueller No-Blo Service Line Stopper Fitting is installed on steel pipe ranging in size from ¾" through 1¼". It is used to make a stop-off on a service line, permitting repair or replacement of that line without loss of gas or interruption to the service. This fitting is welded to the service line and the "E-4" Drilling Machine drills hole completely through service line — makes stop-off up to 100 psig with rubber shut-off tool and inserts or extracts completion plug.

SERVICE VALVE TEE

The Mueller No-Blo Service Valve Tee has welding or threaded inlet and welding, threaded or extended outlet. Installed on the main under pressure with the "E-4" Drilling Machine, this tee has an integral valve which can be closed when making future shut-offs. Sizes ¾" through 1¼".



he Mueller "E-4" Drilling Machine ith proper attachments is used for rilling holes from ¼" through ½" in diameter as well as stopping nd plugging operations. This machine may be used on pressures and temperatures up to 500 psig and 250° Fahrenheit. The versatility of the "E-4" Drilling Machine when used with its related No-Blo fittings makes it a favored tool in the gas industry. The basic line of fittings, used with the "E-4" Drilling Machine, is shown.

MUELLER NO-BLO **Method**

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Dependable Since 1857

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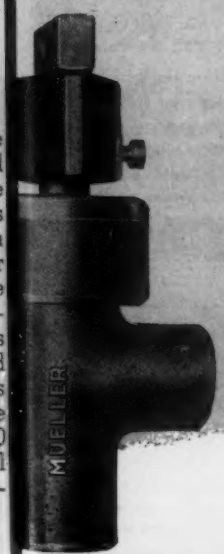
This is the first of a series which will show the broad application of Mueller No-Blo fittings and machines used for their installation.



CURB VALVE TEE

The Mueller No-Blo Curb Valve Tee with welding or threaded inlet and welding or threaded outlet is used as a control valve on a service line from a high pressure transmission line. The "E-4" Machine drills through tee into main and inserts valve stem which can then be operated from ground level through a curb box. Sizes 1" through 2".

YOU CAN WIN THESE FAMOUS Rockwell-built DELTA POWER TOOLS

COMPLETE PRIZE LIST

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2nd Prize—Complete shop of DELTA Homecraft power tools and accessories **$1,114.75 Value**

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2nd Prize—DELTA Homecraft saw and jointer combination and accessories **$207.07 Value**

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10 HONOR AWARDS—Each consisting of a Rockwell Saw Kit and four bound volumes of the Deltagram **$28.70 Value each**

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Ancient meters, like old automobiles, were not designed to be repaired forever.

Many meters 40 years old or older are still in service. They may have been repaired several times—sometimes completely rebuilt.

The cost in parts and labor for rebuilding a worn out meter can frequently exceed the cost of a new meter.

Because of mechanical deficiencies a repaired "ancient" will not stay accurate for as long a period as a new meter.

The cost of replacing an old meter that becomes a "D.R." in service can approximate that of a new one.

Meter repair shops that maintain accurate cost records can prove the economy of scrapping meters that have outlived their usefulness.

$5,000 OVER IN PRIZE VALUES

2 BIG CONTESTS

Conducted At the Same Time

Enter Either or Both!

ESSAY CONTEST

Write a paper not exceeding 2,000 words in length on the subject:

"The Economics of a Planned Meter Retirement Program"

Here is a topic gas company executives, accountants, engineers, distribution and repair shop men can all write about. Contestants can cite actual instances (with supporting figures) to document their entries or give their own arguments with regard to meter repair and retirement practices. Logic and clear thinking will count equally as well as past meter repair experience.

Contestants will, at the discretion of the Editor, be offered a $25.00 cash release fee for the use of their papers in the Rockwell publication—the Flow Line.

Sponsored by

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To Stimulate Thinking About

A PLANNED METER RETIREMENT PROGRAM

JINGLE CONTEST

COMPLETE THE LAST LINE OF THIS JINGLE

Programmed meter replacement, if it's not neglected
Will keep you and your customers fully protected.
Repairing worn meters can frequently be
A false and expensive economy.
Planned scrapping of "antiques," smart meter men say
_____

This contest is easy—anyone in the gas business can enter and win. Just study the tips on meter repair practices listed on this page. Then write a clever, informative last line for the jingle. As an example, the last line could read:

"Will solve accuracy problems, the logical way."

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Fill in coupon with name and address. Clip, pin or staple to entry sheet or sheets. Upon receipt a code number will be assigned to each contestant and this number alone will appear when subject matter is being considered by the board of judges. No entries accepted without a coupon.

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Only those employed by gas utilities or those associated with gas utilities as consultants (such as engineering, tax, accounting, or operating consultants) are eligible to participate.

Contestants must live in either the United States or Canada.

All entries must be accompanied by coupon clipped from any contest announcement. Only one coupon is required to identify a contestant who submits a number of entries at the same time. Entries must be personally written by the contestant whose name appears on coupon.

Write on one side of paper only. DO NOT put name and address on any entry.

An executed coupon will serve as contestant's identification.

Contests close April 30, 1954. Entries must be postmarked on or before that date.

All entries will be impartially judged by a panel of informed gas utility authorities. Names will be announced later.

Judging will be completed as soon as possible after closing date and winners' names will be published in the trade press.

The decision by the judges will be final. All entries become the property of the sponsor and none will be returned.

In the case of ties duplicate prizes will be awarded.

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Attached find entry or entries for

ESSAY CONTEST ☐ **JINGLE CONTE**

Check in boxes provided. Where entries are submitted in contests, check both boxes.

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GAS
AND
REPAIR
PRACTI

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In spite of the unique requirement for membership, the Club roster grows, year by year, from 18 in 1947 to 60 in 1954. And why not, when a survey sponsored by three water works associations, indicates that 96% of all 6-inch and larger cast iron water mains ever laid in 25 representative cities are still in service. And when answers to a questionnaire, mailed to gas officials in 43 large cities, show that *original* cast iron mains are still in service in 29 of the cities.

If your records show a cast iron main in service, laid a century or more ago, the Club invites you to send for a handsome framed Certificate of Honorary Membership. Address Thomas F. Wolfe, Recording Secretary, Cast Iron Pipe Century Club, Peoples Gas Bldg., Chicago 3, Illinois.

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Boston, Massachusetts
BOSTON CONSOLIDATED GAS CO.
Boston, Massachusetts
PUBLIC SERVICE ELECTRIC & GAS CO.
Bound Brook, N. J.
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Bridgeport, Conn.
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SOUTH CAROLINA ELECTRIC & GAS CO.
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PEOPLES GAS LIGHT & COKE COMPANY
Chicago, Ill.
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You can make good use, too, of John Wood's "Mrs. America Promotion Package"... because it has been designed to help you sell *GAS*.

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and JOHN WOOD gives you

MORE PRODUCTION MODELS SELLING FEATURES

Plus **MORE** National Advertising! **MORE** Sales promotion materials!

...and for 1954 JOHN WOOD introduces...

the new GLASS-LINED

JOHN WOOD MERION OR PENFIELD

deluxe *Automatic GAS* WATER HEATERS

NOW — JOHN WOOD, manufacturers of dependable quality products since 1867, adds to its line of dependable water heaters the

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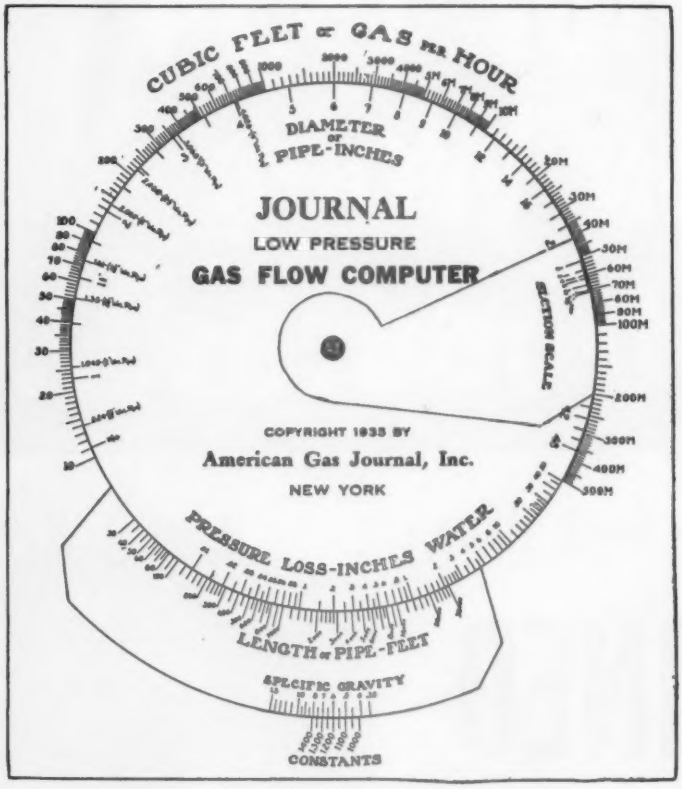
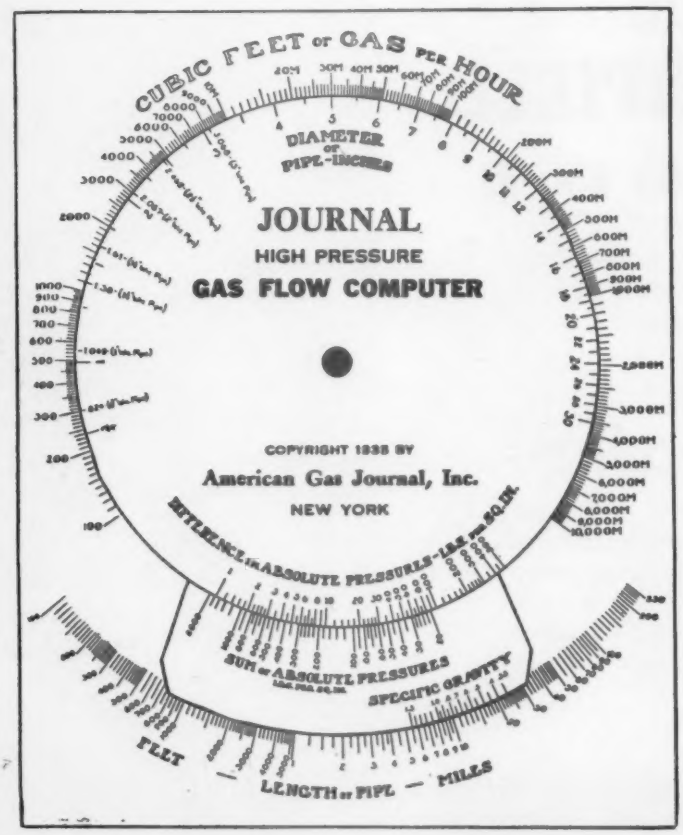
NOW — JOHN WOOD leads the 1954 water heater parade! A complete line, with both galvanized and glass-lined tanks! Aggressive advertising and promotion, including a tie-in with *Mrs. America,* the Gas Industry's liveliest national promotion — everything you need to help *you* "Sell More in '54!"

JOHN WOOD

Get the complete story of the "Mrs. America" Promotion Package!

Ask the JOHN WOOD Man!





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COMPUTERS

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Specific gravities . . . . . 1.5 to .35
Constants . . . . . 1400 to 1000
Pipe length (feet) . . . 30 to 30,000
Price $5.00

FOR HIGH PRESSURES:

Cubic feet of gas per hour . . . . . 100 to 10MM
Pipe diameters . . . . . ¾" to 30"
Difference in absolute pressure to . . . . . 500 psi.
Sum of absolute pressures . . . 20 to 2,000 psi.
Specific gravities . . . . . 1.5 to .35
Pipe length (feet) . . . 100 to 5,000
Pipe length (miles) . . . . . 1 to 250
Price $5.00

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AMERICAN Gas Journal

205 E. 42nd Street,
New York 17, N. Y.

Editorial:

Elliott Taylor

October 4, 1898—December 25, 1953

ELLIOTT TAYLOR passed from this life on the afternoon of Christmas Day.

Incisive writer, hard-handed farmer, avid music lover, inveterate playgoer, magnetic personality, searching intellect, indomitable spirit, loving parent—this was the man who found regenerating inspiration and gratification in the ebb and flood of the gas industry's tide.

Hardly ever one to take a soft or middle-ground on any subject, his convictions did not find, nor did he seek, universal agreement. Rather, he sought wide discussion in the hope that all qualified opinion would be voiced, heard and considered in the process of reaching a wise conclusion.

His insistence upon a position with complete independence, without obligation to any group, any company or any man, gave him a freedom to express himself fully in what he deemed to be the progressive or aggressive interests of the gas industry—which had his fervent allegiance.

Eulogies would be abhorrent to Elliott Taylor. He appreciated the good word as much as any other normal person; but any recital of accomplishments here—that, he would regard as a dismally dreary drone.

In respect of that, and taking the larger view, we recall with what seems both accuracy and appropriateness that, more than anything else, Elliott Taylor brought many gas industry problems to the focus where they could be seen most clearly; then, he gave them conciseness essential to effective thinking-and-action.

Elliott Taylor's personal flexibility extended from the hard labors of clearing timber on his Oregon farm to a fine understanding and appreciation for the nuances of dramatic presentations; from knowing the proper formulas and pressures for spraying the apple trees on his Pennsylvania farm to detecting the influence of Henry Purcell's "Dido and Aeneas" (1688) on the much-later music of Sir Arthur Sullivan. He had an insatiable interest in the details about people and things; his vast department-of-seldom-used-information had a fascinating content. He could deal hard and sharply with those who showed hardness and sharpness; he could be softly and quietly comforting to those who most needed understanding and encouragement.

While regretful of his passing from our scene, many of his friends have voiced an important sense of being fortunate in having known him—his vitality was infectious—whether they knew him one year, five, ten or longer. Certainly, there can be no higher expression of regard for any mortal: *fortunate in having known him.*

After 15 years—walking through fields and over hills, travelling to distant points, at ease in our personal studies, in correspondence, side-by-side in an office or at a workbench, fortunes up or down—this close companion enters his accustomed page, not unmindful of loss, intensely grateful to the Fates that crossed our threads.

There is, indeed, so much enrichment to recollect; sadness has no place. —H. H. C.

1954 Could Be Made The Big Opportunity For The Gas Industry

by Hilding H. Carlson

WITH the level of utility gas sendout to consumers markedly ahead of the average level for the volume of goods produced in American factories and mines during 1953, the industry has the most substantial basis for not only looking confidently toward the future but moving aggressively to raise that level even higher, with mutual advantages for both utilities and appliance manufacturers.

When all figures are available for the combined physical volume of goods produced in American factories and mines during 1953, they are expected to show a level that is 136% higher than the average for the years 1935-1939. The level for utility gas sendout is 284% higher than the average for those years, and in addition to utility gas there is the vast volume of gas that is sold directly from pipelines to ultimate industrial consumers.

The 1953 level of gas utility sendout over 1952 is at least equal to the average for all other production; plus 8.1% for utility gas; 7-8% for all production combined.

The manufacturers of domestic gas appliances will not, in all likelihood, be satisfied with the charts depicting 1953 shipments, but the significant consideration is that those bars are higher than they were in 1952. However, the fact that a market clearly is available to them for expanding gas appliance sales should be more than just heartening—it implies results for 1954 through realistic selling . . . aggressive promotion and personal selling.

Notwithstanding the learned conclusions of *some* economists for 1954, the year comes in with a prospect for good business, even though that means a discontinuation of the boom trend.

If, as some highly competent economists and market specialists believe, the physical volume of production in 1954 will be from 5-to-10% lower than in 1953, *this Nation will not be in a depression.*

All-time highs must, characteristically, be rounded at some time. That process should be regarded as inevitable but under no circumstances should it be regarded as disastrous.

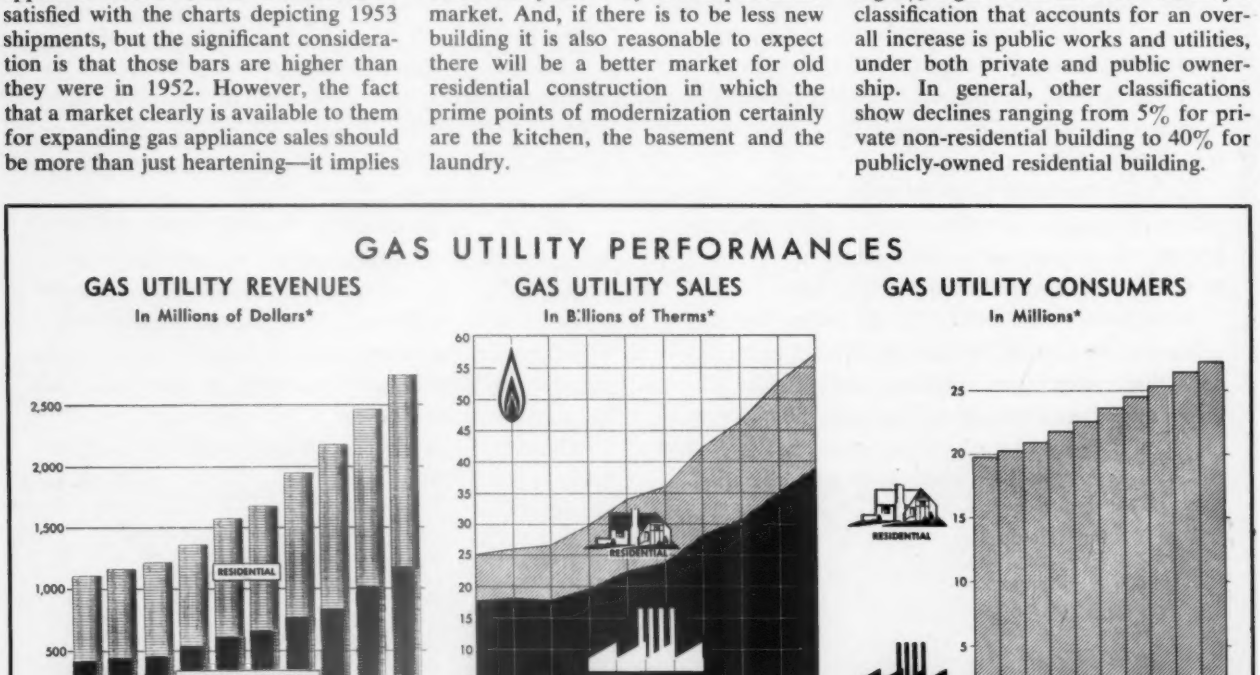
Hard goods, such as gas appliances, are susceptible to selling strategy that results in better-than-average sales figures. One reason for this situation is that gas appliance sales are not heavily dependent upon new residential building, with more than 22 million American homes having appliances that are older than 30 years. An anticipated reduction in new building certainly would appear to be more than comfortably offset by that replacement market. And, if there is to be less new building it is also reasonable to expect there will be a better market for old residential construction in which the prime points of modernization certainly are the kitchen, the basement and the laundry.

So, after reading the observations, the comments and the conclusions of a widely diversified group that keeps its collective finger on the collective pulse of American economy, we find factors that give 1954 a substantial character, if the gas industry finds or makes itself equal to the opportunity—or the situation.

Just as it is possible for an individual to talk himself into a physical state for which there is no basis, so it is possible for an industry or for all industries to talk themselves into a state of recession or, worse, a state of depression. Preconceived and accepted notions of economics have no place in current gas industry affairs. The alternative is clearly to turn an anticipated 5-to-10% all-industry decline to good advantage.

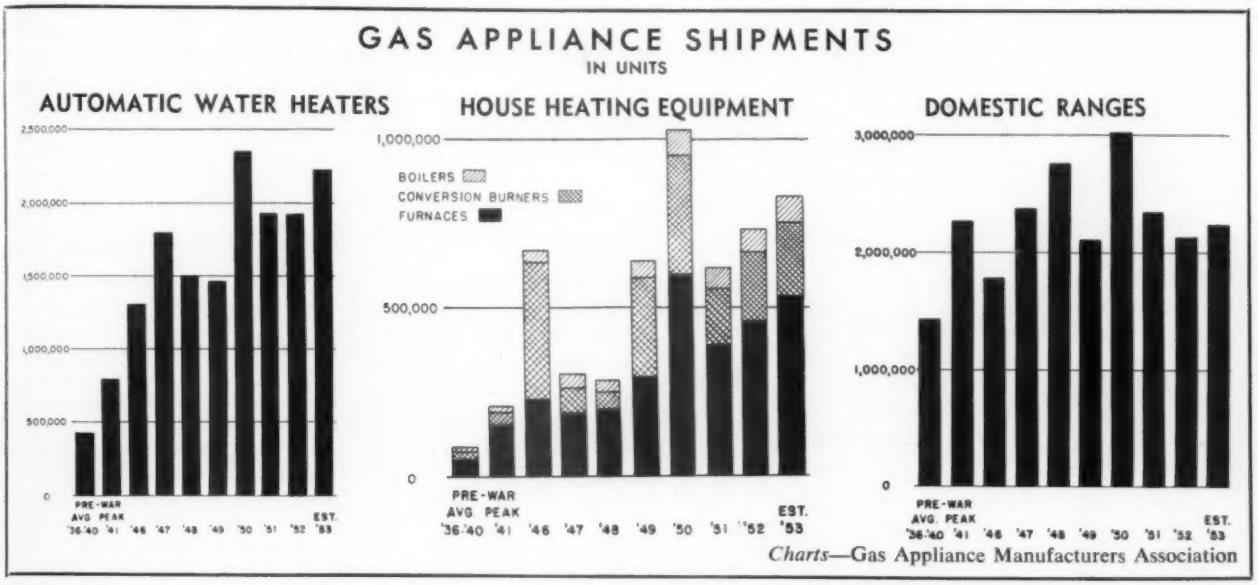
Construction

The annual forecast by Thomas S. Holden and Clyde Shute, F. W. Dodge Corp., for the construction industry, shows total construction in 1954 as being 2% higher than in 1953. The major classification that accounts for an overall increase is public works and utilities, under both private and public ownership. In general, other classifications show declines ranging from 5% for private non-residential building to 40% for publicly-owned residential building.



* 1953 data are estimated

Charts—American Gas Association



Charts—Gas Appliance Manufacturers Association

Residential building under private ownership is expected to decline 8% this year.

The forecast for construction by the United States Bureau of Labor and Statistics and the United States Department of Commerce agrees to a substantial extent with the independent forecast by F. W. Dodge Corp.

Gas Industry Development Program

This program for appliance manufacturers and gas utilities is, as it should be, regarded as the salvation of the gas industry if it is to survive in the relentless competition with the selling efforts for electrical equipment.

However, the current test-tube phase of the program seems to leave the rest of the gas industry in a deep-freeze until some conclusions are reached in the 10 cities involved. Quite the opposite should be the case.

Every conceivable means of stimulating and maintaining both interest and activity among all gas companies should be brought to bear, constantly and with a sharp display of uncompromising vigor.

If and when conclusions are reached from the test-tubes, it will, for all practical purposes, be necessary to reintroduce the program to the industry. It seems only a normal procedure, after a general approval of the program by manufacturers and utilities, to keep the entire industry fully aware of every plan and every item of progress and accomplishment in each of the 10 cities, so that other individual companies may immediately pick up ideas that seem appropriate to them—and put them into action. That would spread accomplishment—now—it would maintain interest in the program as a live, aggressive and vital gas industry activity, wherever gas and gas appliances are sold.

That kind of promotion of the program to the overall industry would lift it out of the deep silences where it now seems to rest.

Earl H. Eacker says:

In his year-end statement, Earl H. Eacker, president, American Gas Association, and president, Boston Consolidated Gas Company, says that gas companies would "add another 1,221,000 new gas house-heating customers in the 1953-1954 heating season with nearly 1,200,000 more homes to receive gas househeating in each of the 1954-1955 and 1955-1956 heating seasons, as increased supplies of natural gas are brought into areas where the demand for gas househeating still exceeds ability of the utilities to serve these prospective househeating customers.

Earl H. Eacker

"The gas industry in 1953 maintained its position as one of the fastest growing industries in the nation. Paced by the continued expansion of its natural gas systems, the gas utility industry achieved new records in the number of customers served, in volume of gas sold and in total revenues from sales of gas. Natural gas reserves are at new highs and construction programs costing billions are planned for the next three years. There is every reason to believe that 1954 will be a banner year and the outlook for the industry for several years ahead is most promising.

"Today the gas industry has more than $11.5 billion invested in plant and facilities, with total capital assets of more than $13.3 billion. During 1953, about $1.2 billion was spent by the industry for new construction and expansion of present plant to meet the ever-increasing demand for gas service.

"The tremendous advance made by natural gas is responsible for the greater part of this program. Natural gas customers have increased more than 150% since 1940 while the volume of gas sold by the utilities and pipelines has increased 235% in the same period. While a considerable number of these are customers of gas utilities converting from manufactured or mixed gas distribution to natural gas, many are new customers in areas now being served with gas for the first time.

"The gas utilities were serving approximately 27,200,000 customers at the end of 1953, including about 300,000 LP gas customers served directly by gas utility companies. This was a gain of about 800,000 customers, or 3% over the 26,400,000 customers, including 300,000 LP gas customers, on gas utility lines a year earlier. In addition, some 6,500,000 customers are served with LP-gas in areas not located on gas utility mains.

"More than 20,600,000 customers were receiving natural gas at the year-end, a gain of 6.5% over the previous year. Since a major share of these gains were the results of conversions by large utilities, the total of manufactured and mixed gas customers decreased to about 6,300,000 at the end of 1953, a decline of 6.8% under the 1952 total.

"Total sales of utility gas in 1953 amounted to 56,948,000,000 therms, a new high level, that represented an increase of 8.1% over the previous record made in 1952.

"More than 8,000 miles of new pipeline were approved by the Federal Power Commission last year. More than 5,000 miles were constructed, with about 3,000 miles under way or starting at the year-end. Applications for several thousand miles of additional natural gas pipeline were awaiting action by the Commission at the end of 1953.

"It is estimated that the nation's utility and pipeline network of gathering, transmission, storage and distribution lines for

(Continued on page 38)

Advantages of Adequate Rates for Interruptible Industrial Gas

by Paul E. Peacock, Jr.
Peacock Corporation
Westfield, N. J.

PARTS of New England have now been receiving natural gas for approximately three years. This highly industrialized section of the Country seems to offer an ideal point for discussion of the interruptible industrial gas rate and its value to the gas utility.

Paul E. Peacock, Jr.

"As long as [gas] companies buy gas on a demand-type of rate they will have to sell interruptible gas," Harry K. Wrench, president and general manager, Minneapolis Gas Company; said in 1951, based on experience records of his company. The same opinion has been voiced by others and today, more than ever, it appears that one logical solution to problems created by demand-type natural gas rates would be the use of interruptible industrial gas rates.

The unrestricted use of natural gas for domestic heating created such greatly unbalanced load factors that many pipeline companies had to take steps to correct this condition. One of the early steps was to apply a maximum daily limit to the amount of gas that might be taken by a utility without penalty. Any gas taken above this maximum amount would be charged for at greatly increased rates. In some instances this charge was as much as $10.00 per Mcf for all excess gas taken, and even this did not correct the unbalanced load factors satisfactorily.

Several companies began applying what we know now as "demand-commodity" gas rates. Some early rates carried a demand of only $1.00 per Mcf, compared to a $4.50 demand charged by one pipeline serving part of New England.

Gas received by a utility is charged for at the commodity rate and then the demand charge is added. Using the highest peak day of the previous 12 months, the pipeline company charges a "demand" based on that peak day and no gas is delivered for this charge. If the demand rate is $1.00 and the peak day was 1 MMcf, then the monthly demand would be $1,000.00 in addition to the commodity charge. If the peak day was 10 MMcf it is obvious that the monthly cost would be $10,000.00 and the annual cost would be $120,000.00, plus the commodity charge. Whether it is $12,000.00 or $120,000.00 per year, this charge represents a considerable sum to the gas utility when it is solely a "demand" charge for which no gas is received.

One pipeline company serving New England sells its gas on the demand-commodity rate basis, charging $4.50 per Mcf as demand and 30¢ per Mcf as commodity. This pipeline company allowed the gas utilities a period of three years for development, in which time the utilities had the opportunity to study their load conditions and apply corrective measures. Under the contracts with the utilities, the average cost of all gas delivered during a single year was not to exceed a maximum of 53¢ per Mcf for the first three years.

The three year grace-period has about passed for a number of utilities served by this pipeline company. The utility will soon feel the full import of the $4.50 per Mcf demand. It is very likely that many of them will agree with Mr. Wrench of Minneapolis Gas Company, that the answer to their high demand problem lies in the proper application of interruptible industrial gas rates.

It is not enough to state that it is necessary to have an interruptible gas rate. This rate must be low enough to allow the industry sufficient savings to justify installation of suitable standby plants to serve during periods when natural gas is under curtailment. If the rate is not low enough to warrant investment in standby plants, the industry will continue to use their present fuel which, in many cases, may be LP gas.

That many utilities have not offered attractive industrial rates in the past is evident by the very large volume of LP gas sold for industrial purposes in New England. The Bureau of Mines' 1952 report on sales of LP gas includes sales in excess of 19 million gallons for industrial purposes in New England. This volume of LP gas is equivalent to more than 1.7 billion cubic feet of 1,000 Btu natural gas. Obviously, part of this business comes from areas not served by natural gas, or even manufactured gas; however, it does illustrate one potential source of a ready-made market for interruptible rate gas sales. Those industries now using LP gas would not have to spend large sums to convert their system to standby plants, but they would have to be offered a gas rate attractive enough for them to give up firm propane contracts for standby contracts, under which deliveries of LP gas would not be as reliable.

The established gas user who can be secured with proper interruptible rates is represented above. In addition to this large field, there is the even larger field of industries using other types of fuel. Most of this latter group can be secured with attractive rates that would allow them to install dual-burner equipment. In many cases, natural gas would improve their product, but the cost of gas in the past has prohibited its use.

Before discussing a recommended interruptible industrial gas rate it would be well to consider just what each type of gas costs the gas company. It is easy to assume that the average annual cost of the gas is the cost of all gas that is sold regardless to type of service. Farsighted gas officials realize that each class of gas service creates an individual demand and that this demand should be applicable to that class of service, rather than to the whole sendout. With this in mind the author presents the following data for consideration:

1. A complete average degree-day record for all U. S. Weather Bureau Stations in New England. This is the average for approximately the past 50 years, obtained from the Weather Bureau, Washington.

2. The average distribution of loads, as percentages of total sales, for several typical gas utilities. The averages are approximately:

Normal domestic and miscellaneous small consumers	59%
Commercial and firm-rate industrial consumers	23%
Domestic heating (before natural gas)	18%

In selecting a Weather Bureau station, the record of Fitchburg, Mass., was used because it is centrally located. The average degree-days, by month, for Fitchburg are:

PAUL E. PEACOCK, JR., a nationally recognized authority in the LP gas engineering and operating field, is the author of more than 15 articles on LP gas and anhydrous ammonia for both American and foreign periodicals. In the past 24 years he has designed approximately 100 peak load and standby plants for gas utilities and industrial firms. Several of the installations he has designed are located in foreign countries.

September	144.3
October	431.8
November	773.8
December	1,139.4
January	1,240.0
February	1,128.0
March	940.3
April	572.5
May	254.3
Total average degree-days for heating season	6,624.4

In addition, the Washington records reveal that during a 10-year period ending June 1951, Fitchburg had quite a number of severe days:

635 days exceeded 35 degree-days
412 days exceeded 40 degree-days
118 days exceeded 50 degree-days
13 days exceeded 60 degree-days
5 days exceeded 65 degree-days

It is very obvious that the utility would have to provide some form of peak-shaving to reduce the occasional high peaks to some average maximum determined by individual company conditions. Many articles have been presented on the subject of peak-shaving and it is not necessary to discuss that subject further. For considerations in this article, it will be assumed that the utility will have some form of peak-shaving plant and will shave all peaks above a 35 degree-day day.

For purposes of discussion, the author took a theoretical gas utility having annual gas sales of one billion cubic feet of 528 Btu manufactured gas. If converted to 1,000 Btu natural gas, this theoretical company would have approximately the following distribution of annual loads based on the previously listed percentages:

Normal domestic and miscellaneous small consumers	312,000 Mcf or 59%
Commercial and firm-rate industrial consumers	121,000 Mcf or 23%
Domestic heating (before natural gas)	95,000 Mcf or 18%
Total annual load with 1,000 Btu natural gas	528,000 Mcf—100%

With the above data it will now be possible to determine the cost of these several classes of customers for consideration in connection with a reasonable interruptible industrial gas rate.

Cost of domestic heating gas

The cost of the domestic heating gas is the full amount of the annual cost created by the maximum-day heating demand, plus the commodity charge for all heating gas sold plus the cost of all peak-shaving gas. As previously stated, it would be assumed that the utility would peak-shave all gas over that required for a 35 degree-day day.

The theoretical gas company with an annual heating load of 95,000 Mcf, and applying the Weather Bureau's average degree-days for Fitchburg, would have to peak-shave on approximately 113 days each year and would produce a total of approximately 12,400 Mcf of 1,000 Btu peak-shaving gas. This would reduce the natural gas used for heating to 82,600 Mcf per year. The demand created on a 35 degree-day day for this theoretical company would be 500 Mcf.

The cost of producing peak-shaving gas will vary with the type of gas produced and the individual utility operations. For these calculations, a nominal cost of 12.63¢ per therm, or $1.263 per Mcf of 1,000 Btu gas, will be used. This is based on the delivery cost of propane which likely would be used by many companies. The total annual cost of the heating gas will now become:

82,600 Mcf of natural gas at 30¢ commodity charge	$24,780.00
12,400 Mcf of peak-shave gas at $1.263 per Mcf	15,661.20
500 Mcf peak-day x $4.50 per Mcf x 12 months	27,000.00
Total annual cost of 95,000 Mcf of domestic heating gas	$67,441.20
Average cost of all domestic heating gas sold, per Mcf	0.71

It is this average figure that should be considered when thinking in terms of the cost of domestic heating gas, rather than the average of the whole.

Cost of firm industrial gas

This group of consumers is included under "Commercial and firm-rate industrial consumers." There is no way of segregating the gas used solely by the firm industrial rate consumers, so it will be necessary to assume that all the 121,000 Mcf listed for this group was used by the firm industrial consumer. Further, it will be assumed that all the gas was used during a five-day week and that none was used on holidays. This will reduce the number of days per year in which it was used to about 252 and will raise the average daily demand to 480 Mcf, for which the demand charge must be paid.

The total annual cost of the firm industrial gas will thus become:

121,000 Mcf of natural gas at 30¢ commodity charge	$36,300.00
480 Mcf peak-day x $4.50 per Mcf x 12 months	25,920.00
Total annual cost of 121,000 Mcf of industrial gas	$62,220.00
Average cost of the firm industrial gas sold, per Mcf	0.514

Cost of interruptible industrial gas

Based upon the application of the interruptible gas rate during periods when the total gas sales fall under that maximum point as determined by a 35 degree-day day, then all interruptible gas sold would cost the utility only the commodity charge of 30¢ per Mcf. On this assumption, the following: Average cost of interruptible rate industrial gas sales, per Mcf, $0.30.

It may be seen from the above calculations that the cost of interruptible rate gas is considerably less than half that of the domestic heating gas and considerably less than that of the commercial and firm rate industrial gas. These figures alone should make this type of service attractive.

The interruptible rate customers would be those using large quantities of gas. This would have to be established as a part of the rate schedule, as well as stipulating that the customers must have acceptable standby plants to serve during periods of natural gas curtailment. It is the lack of these standby plants which has caused some utilities embarrassment when it was necessary to curtail industrial customers. Proper rates would require that the industrial customers provide suitable standby plants before being eligible for the interruptible rate service.

The interruptible rate schedule would specify that the gas could be curtailed on short notice when required. This would allow the utility to serve those customers on intermittent basis during the heating season and regulate the utility peak-demand at will. Under such a plan it would be possible to fill in most of the valleys in the gas demand created by the heating load. In the case of the theoretical company using 95,000 Mcf per year, there would be available approximately 100 MMcf per year for this interruptible gas rate service. This would

(Continued on page 33)

FEDERAL POWER COMMISSION

Allocations Made from Transon

The Commission has issued an order allocating, on a permanent firm basis, a total of 47,047 Mcf of gas per day from Transcontinental Gas Pipe Line Corp. and reserving for future determination, after hearings, the allocation of an additional 16,953 Mcf which the company has available.

The order also covers the allocation of 18,900 Mcf, part of which is included in the 47,047 Mcf on a temporary firm basis until April 1, because the customers to whom it had been primarily allocated will not be able to take it prior to April 1.

The gas considered in this order became available when Transcontinental decided it could not deliver those volumes for resale in New England. Transcontinental originally proposed to allocate the gas to 11 of its existing customers; other companies and municipalities intervened seeking to obtain allocations.

The Presiding Examiner decided in November to authorize Transcontinental to supply about 28.5 MMcf to seven existing customers, with the remainder of the 64 MMcf going to various interveners. Exceptions to this decision were filed and reviewed by the Commission.

The allocations, in Mcf per day, made are as follows:

	Perm.	*Temp.*	*Temp. to Apr. 1*
United Gas Impr. Co., Phila.	1,322	736	740
S. Jersey Gas Co.	1,189	662	665
Consolidated Ed. Co., N. Y.	9,846	5,475	5,509
Brooklyn Union Gas Co.	9,582	5,329	5.361
Long Island L. Co.	529	294	296
Elizabethtown Cons. Gas Co.	661	367	370
Pub. Serv., N. J.	3,502	1,949	1,959
Phila. Elec. Co.	2,973	1,541	4,000
			18,900
Delaware P.&L. Co. on April 1	10,900	600	
			16,953
Danville, Va.	752		
S. C. Gas Co.	257		
Georgia Gas Co.	748		
Atlanta Gas L. Co.	1,278		
Lexington, N. C.	3,508		
	47,047		

TGT Asks OK on New Facilities to Equitable

Tennessee Gas Transmission Co. has applied to FPC for authority to construct facilities to increase the delivery capacity of its pipeline system by about 24,400 Mcf per day to enable it to transport natural gas for Equitable Gas Co.

The proposed project, estimated to cost $9,314,000, would include new compressor units totaling approximately 28,000 hp, and about 50 miles of 10-inch miscellaneous lateral lines in Texas. Tennessee said that these proposed facilities, together with other facilities not yet constructed, would increase the daily design capacity of its system to about 1,719 MMcf with a peak day capacity of approximately 2,100 MMcf.

The proposed facilities would be used to enable Tennessee to receive natural gas on behalf of Equitable in Texas and to transport and deliver equivalent quantities of gas to Equitable in Pennsylvania.

Suspend El Paso's Proposed Cancellation of Rate Schedule

The Commission has suspended a notice of cancellation filed by El Paso Natural Gas Co. of its rate schedule and form of service agreement covering common carrier service on its pipeline system. A hearing will commence March 1.

The schedule and service agreement, in effect since December, 1950, were filed by El Paso to comply with a stipulation which it entered into with the Department of Interior requiring the filing with FPC of a rate schedule for common carrier service, as a prerequisite to Interior's issuance, under the Mineral Leasing Act, of permits granting rights-of-way. No service has been rendered under the schedule.

The Mineral Leasing Act has recently been amended and El Paso said that it has been advised by Interior that, in effect, the common carrier requirement of the Act is not now applicable to a company subject to regulation under the Natural Gas Act.

The FPC said that it has received several objections to the proposed cancellation, together with requests for additional time to prepare and file answers, or for a public hearing. The Commission said that the cancellation has not been shown to be justified.

Allow Two Rate Increases by Natural Gas Pipeline of America

The Commission has issued rulings in two rate proceedings involving Natural Gas Pipeline Company of America, in which it determined that the wholesale natural gas rate increases proposed by the company for customers in Kansas, Nebraska, Iowa, Illinois, Indiana and Wisconsin are justified.

One of the FPC's orders affirms, with modifications, a decision by a presiding examiner and approves a $2,400,000 increase in Natural's rates based on the calendar year 1952 applicable to 15 of Natural's 17 customers. The second order allows a further increase of $3,511,489, based on the year ending October 31, 1953, applicable to 16 of its 17 customers.

The $2,400,000 increase was in effect under bond from December 1, 1951, to April 1, 1953, when it was superseded by the further increase of $3,511,489, which has been in effect under bond since that time. The Commission's action allows Natural to retain all of the money it has collected under bond in both proceedings.

The first increase was filed by Natural in April of 1951. The rates accepted by the Commission in this proceeding provide for a rate of return of 5.99%.

American Gas Fundamentals OUTLINE

NATURAL GAS
- *Geology
- *Drilling and completion
- *Methods of estimating reserves
- *Chemicals from gas
- *Natural gas conservation
- *Underground storage of natural gas

MANUFACTURED GASES
- *Coke oven gas; producer gas, blue gas; carbureted water gas
- *Reformed gas
- *Hi-Btu oil gas
- Interchangeability

LIQUEFIED PETROLEUM GASES
- *Sources, properties and uses

BASIC GAS LAWS
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- Supercompressibility

TRANSMISSION
- *Pipe lines
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GAS STORAGE
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CONVERSION PRACTICES

MANAGEMENT PROBLEMS AND POLICIES
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- Theories of rate making
- Functions of the Land Department
- *Communications in the gas industry
- Personnel Management

GLOSSARY
- *Ab-to-Met

***Indicates chapters published since January 1, 1951; available without charge to new subscribers to American Gas Journal.**

How to Use the Material

American Gas Fundamentals *is a comprehensive compilation of basic gas facts to guide any gas utility employee toward a broader understanding of the industry as a whole.*

The series is designed to be removed from each current issue of AMERICAN GAS JOURNAL *and filed in a ring binder where it may be accumulated into a text book of permanent usefulness. Material should be filed under the major subject head appearing in the upper right hand box at the head of each chapter.*

Functions of the Land Department

BEHIND the marketing of each thousand cubic feet of natural gas and each barrel of petroleum oil are the activities of the little-publicized, but none-the-less important, segment of any natural gas company organization—the Land Department. Some companies have separate departments for various phases of Land Department activities, such as lease, land, right-of-way, real estate, claim, title, insurance, franchises and gas purchase.

In the production, transportation and distribution of natural gas, the Land Department team is the first on the scene before operations are begun in the field. Similarly, it is the last to leave the scene when operations have been completed. And, in between these time limits, it carries on a wide variety of functions found in no other department.

Before wells can be drilled to obtain gas for the market, there first must be a place to drill, in which the company will have legal title to explore for gas and oil and market these products when developed. As soon as the gas supply is located, the company must construct pipelines, compressing stations and other facilities in order to transport it to market. And again, before any of these operations can get under way, the Land Department must first secure certain necessary legal rights.

The step-by-step process by which these rights are obtained generally follows this pattern: The company's geologist determines the area in which oil and gas leases or rights are to be obtained. Upon his recommendation, the Land Department's field agent is dispatched into the territory—armed with all available maps and information concerning the area—with orders to conduct a search for unleased acreage and secure all leases or gas rights that are available. He has definite instructions as to the terms and conditions to which he may commit the company in securing these rights. In carrying out this program, the field agent encounters many difficulties, including a lack of definite knowledge of the terrain of a strange territory, a lack of ready-information "on the ground" as to the actual ownership of the land, or the ownership of the oil and gas under the surface, locating and contacting absentee-owners and numerous scattered heirs, and checking records in the court house of the county seat to insure that the complete ownership of each tract of land is a party to the lease or gas right deed.

Among some producing companies the practice of working through lease brokers is followed, particularly if a new area is being considered for development. The reason for this often is that a broker can sometimes sign up large parcels of land without starting a stampede of speculators into a promising field. Often when company representatives are the first and most active on the scene, particularly if they are from a major producing oil or gas company, their very presence and interest is a tip-off to others that some promising development work must be in prospect. This can result in isolated parcels of land in a tract being tied up by competing companies, or perhaps by individuals who only expect to make a profit if the development work of the major company proves-up an area.

In some instances, it is desirable to purchase the oil and gas in fee if it can be obtained at a reasonable price. In this case, the company secures a deed conveying to it the oil and gas, together with the right to enter upon the land to drill, operate and market the product, generally without any additional payment to the surface owner.

If the rights are to be secured by an oil and gas lease, the leases are made between the owners of the oil and gas, who are referred to as the "lessors," and the company taking the lease, referred to as the "lessee." Leases grant to the lessee the exclusive right to drill on the premises for petroleum oil and natural gas and the right to remove them, the right to construct and maintain on the premises the necessary machinery, structures and pipelines for the operation and production of oil and gas, and the right to use sufficient water and gas from the premises for drilling and operating on the property.

The lease contains a definite or primary term, which may be from one month to 20 years. It also includes a provision that it continue in force so long after commencement of operations as the premises are operated for the production of gas and/or oil, or as long as gas or oil is found and produced in paying quantities or as gas is stored under the premises, this is called the indefinite or secondary term.

Lease terms

The lease provides that the lessee may, by paying to the lessor a carrying rental, usually at the rate of $1.00 per acre per annum, hold the lands covered by the lease without developing them for oil and gas during the definite term specified therein. It also provides that, upon completion of an oil well, the lessors are to receive as royalty one-eighth of the oil, which is delivered free of charge into the pipelines or tanks of the company transporting and storing the oil produced from the premises. However, upon completion of a gas well the lessors are paid royalty in one of the following manners, whichever is specified in the lease:

1. A flat royalty of a stipulated sum per year for each and every gas well drilled on the premises.
2. One-eighth of the value of the gas produced, based on the wholesale field price of the gas at the well-head.

The lease also contains a provision for paying an annual money royalty for each well used in connection with the storage of gas.

The money payments for carrying-rental and well-royalty are usually paid quarterly. Most leases also contain a provision whereby the lessors reserve a stated quantity of gas for domestic use on the premises.

Before operations are started under any lease, the Land Department secures an abstract of title prepared by an attorney, certifying that the company has a good and marketable title under its oil and gas lease. In many instances, this abstract will show certain defects, such as lack of proper signatures, or liens, such as mortgages, judgments or taxes, which have to be properly adjusted.

In recent years, the successful development of storing gas in depleted oil and gas fields has created much additional work and many complex problems for the Land Department. If the pool being developed is in an area where the company still maintains some leases and wells, it is necessary to approach the owners of the land and oil and gas and secure an amendment to the original oil and gas lease, granting the company the right to inject gas for storage in wells then operated, as well as the right to clean out and operate abandoned wells for the storage of gas. The company also must secure oil and gas leases containing gas storage provisions covering all the land within the perimeter of the storage pool, either for actual storage purposes or for the protection of the pool.

Continuing functions

As leases are acquired and wells developed, the Land Department has the continuing responsibility of maintaining records of these items and preparing schedules of rental and royalty payments. In most operating companies, the Land Department prepares the actual checks which are mailed periodically to the lessors for rent and royalty, and has the responsibility for getting these checks in the mail before the scheduled due-date.

In connection with these payments, maintenance of a payment schedule has its own peculiar problems. A lease usually provides for making payments to only one person who is designated as "agent" for all the owners. When the company receives information of the death or resignation of such an agent, further payments accruing to the owners of the lease cannot legally be made until the owners designate a new agent.

In many cases, particularly old operated leases, ownership has descended to many heirs, who sometimes own such small interests money-wise (or are just plain contentious) that they will ignore all attempts of the other heirs to secure a power of attorney agreement appointing a new agent. Often these situations must be solved by one of the Land Department's field agents making personal calls upon the heirs and working out such an agreement. Making separate small check payments to each heir would be so expensive and time-consuming that it would not be economically feasible for the company.

As gas is produced and marketed from the company's wells over a long period of time, there comes a day in the life of every well when the gas is depleted to the point where it is no longer profitable to operate it under the original conditions. This calls for either reduction in the operating expenses of the well or its outright abandonment.

Many leases provide for payment of a flat annual money royalty, and this payment, naturally, is one of the large items of expense in the well's operation. When the situation warrants, the Land Department is requested to contact the royalty owners and attempt to secure a reduction of this annual payment. This again involves a first-class selling job by the field agent. He must be prepared to discuss past production of the well, the operating and maintenance costs, its current open-flow and rock pressure and how such tests were made, as well as the items making up the total annual operating and maintenance expenses on the well. Needless to say, the job of taking money away from someone is a tougher proposition than increasing his income. Threat of abandonment of the well, and thus termination of all income derived from it, is the only sharp-edged weapon with which the field agent is armed.

Rights-of-way

When it comes to constructing a pipeline, after receiving the survey maps from the engineering department, field agents also negotiate the purchase of rights-of-way from the owners of the various tracts of land. This requires that the field agent be a first-rate salesman and have a complete knowledge of company operations. He encounters the same obstacles as he does in leasing and, in addition, he faces the problem of securing *every right of way*. A pipeline right-of-way grant is an easement granted by the owner of land to the company to construct, maintain and operate a pipeline, and may contain a provision limiting the diameter of the pipe to be used. Payment is made to the land owner of a stipulated sum of money per rod based on the distance and diameter of the pipe. This is the only payment made under the right-of-way, except for future payments which are made for such damages as to crops and fences during construction or maintenance of the pipeline. These grants are perpetual and provide that the company may maintain the line so long as it is useful and necessary for the transportation of gas by the company.

In most states, certain utility companies are granted, by statute, the right to condemn right-of-way easements for the installation of facilities to serve the public. Failure to secure rights of way as outlined in the original survey means either a relocation of a survey or exercising the right of *eminent domain*. Exercising eminent domain to secure the right to construct a pipeline across a land owner's property is used only as a last resort. This procedure is usually irritating to the land owner and causes a loss of good-will for the company and may hamper other operations of the company.

Where pipelines cross railroads, highways, streets and streams it is necessary to secure license agreements or permits from the railroads, states or municipalities.

Damage claims

An example of the complexity of right-of-way procedure is afforded in a study made by Oklahoma Natural Gas Company, which published the figures on the total number of separate negotiations that had to be completed to enable it to build 100 miles of 12″ pipeline in that state. To obtain the right-of-way, the following had to be secured: 250 rights-of-way with 650 signatures; 2 river crossings with suspension bridges on each; 7 railroad crossing permits; 10 state and U.S. highway crossing permits; 32 county highway crossing permits; and 28 rights-of-way from owners living in 16 states other than Oklahoma.

It can be seen that this was no small undertaking, even for a state where large land holdings are the general rule, and the problem is complicated many times in the more populous areas of the Central and Eastern states.

After installation of pipelines, or telephone and communication lines, the Land Department team again goes into action to settle damage claims arising from their construction. The field agent must have at hand the market prices of timber, fence posts, fence wire, hay, grain, field and garden crops, and fruit trees, and know the value of wells, springs and buildings. Damage settlement is made either on the basis of determining actual damages done or on an estimate of the expense necessary to restore the ground used to approximately its original condition.

In addition, claims for damages due to straying, hurt, or killed livestock may have to be settled. Many unusual angles enter into these settlements, such as the claim which was paid to a farmer for "mental anguish to his cattle." He claimed that the pipeline contractor's equipment operating in his pasture field had worried his cattle causing them to "drift" (lose weight), and that the total poundage lost by his herd lowered their value in the market.

Besides construction damages, there is an ever-continuing stream of claims to be settled resulting from damages caused in ordinary operation or maintenance of lines and wells. In settling damages, the field agent is in the middle as a go-between for the company and the claimant. His job is to make every effort to reach a fair and just settlement, satisfactory to both parties.

Sometimes, despite the best efforts of the field agent, a mutually-satisfactory basis cannot be reached, and it may then be necessary to settle claims through calling in neutral or unprejudiced parties to decide the amount of damage that has been done.

In some states, before gas can be distributed and sold to the public, it is necessary to secure a franchise from the various municipalities.

Since most companies consider it desirable to purchase insurance to cover claims arising from their various operations, the Land Department must arrange to secure this coverage, and it may be necessary to purchase numerous types of policies in various amounts to cover each particular hazard.

To supplement its supply of gas, the company makes purchases of tremendous volumes of gas often equalling or even surpassing the amount produced from its own leaseholds. These purchases are made from three primary sources: huge interstate pipeline companies, other operating companies, and independent producers.

Purchases from independent producers, particularly, require a great deal of preliminary work both in the office and in the field—checking such things as availability of the purchasing company's pipelines to the location of the gas source, capacity of pipelines to handle the gas, producer's title to the lease involved, and preparing and executing the gas purchase agreement.

Other negotiations

The Land Department also negotiates agreements with independent operators for the drilling of wells on company leases, with the provision that any gas found be sold to the company under a gas purchase agreement. These agreements generally are referred to as "farm outs" and are negotiated to supplement the supply of gas.

In normal every-day operations, many other problems arise which are submitted to the Land Department for solution. For example, when surface land is needed for the construction of such facilities as compressing stations, regulators, meters, storage yards, offices and warehouses, or when a right-of-way for a new roadway is needed, the Land Department representative purchases or leases the

SOME FUNCTIONS OF THE LAND DEPARTMENT

INSURANCE	OIL AND GAS LEASES FEE OIL AND GAS	PIPELINE AND COMMUNICATIONS RIGHTS-OF-WAY	FEE AND LEASED PROPERTY	MISCELLANEOUS
Public Liability	Renewals	State Permits	Offices	Gas Purchase Agreements
Fire	Ratifications	County Permits	Warehouses	"Farm Out" Agreements
Theft	Abstract Title	Municipal Permits	Storage Yards	Road Right-of-Way
Boiler	Wells	State and Federal Permits for Stream and River Crossings	Compressing Stations	Sale of Leases, Wells and Other Property
Money and Securities	Royalty Reduction	Railroad Crossing License Agreements	Regulator Sites	Receive and Report Claims to Insurance Companies
Elevator	Limit Reserved Gas	Condemnations	Meter Sites	Collect Claims Against Others
Workmen's Compensation	Amending Agreement for Gas Storage	Settlement of Damages	Radio Towers	Franchises
Plate Glass	Delay Rental		Abstract Title	Record Agreements Various Recorders
Indemnity Bonds	Royalty Payments		Payment of Taxes	Ledger and Index Records
Physician and Dentist Liability	Acreage and Well Holdings			
Camera Floater	Surrender			
Transportation Floater				

necessary land. And finally, when a well has lived its life and the gas has been depleted to the economic limit of production, the Land Department is called in to write the obituary. If the well happens to be the last well on the lease and is being abandoned, royalty payments are stopped and a surrender of the lease is made to the lessors.

More could be said regarding the scope of the work of the Land Department. While other company operations, as a rule, are confined to a well-defined boundary embracing its lease-holds, wells, pipelines, and market area, the operations of the Land Department extend far beyond these boundaries, even into foreign countries.

The matter of dealing with owners of mineral interests and surface rights is becoming more complex with each passing year. At the birth of the petroleum industry it was possible to make all deals on the ground, since owners of property usually could be found at or nearby their property. However, changing economic conditions, coupled with war-time migration of vast numbers of our population, have brought about the relocation of many of the people with whom the Land Department representatives must deal. This situation is the cause of many hours of searching and many miles of travel by field agents.

In addition to the difficulties in locating and contacting people who must be dealt with, there is always the handicap of explaining a situation which involves property and people who might possibly be a thousand or more miles away. This requires that the field agent making such a distant contact be thoroughly prepared to answer any and all questions concerning his project. Once the deal is agreed to, then comes an added difficulty in getting the person before a notary public or other official qualified to take acknowledgements. These contacts involve a catch-as-catch-can procedure in many instances because of different work shifts and other extenuating circumstances.

The field agent's life on the road is one wonderful continuity of long, hard jaunts on foot, by mule, horseback, auto, bus, train, or plane, coupled with irregular meals, cancelled hotel reservations, unpredictable schedules, and always the unhappy prospect of finding that the person sought has moved to some distant location.

Public relations

The field agent is the salesman of the Land Department, and he must be a top-notch public relations man, since the way he conducts himself in any situation can either create much good-will toward the company or in an instant tear down the good-will which the company has built up over a long period of years.

A typical field agent is found to have a pleasing personality and is at ease in meeting the public, whether it be represented by a backwoodsman or the president of a large corporation. He also possesses a good educational background, a ready knowledge of all of the company's operations, a good strong constitution, determination, good judgment and plenty of initiative.

However, success or failure in the completion of the many and varied functions of the Land Department depends, naturally, upon the teamwork of all the personnel who make up the department. Each clerk in the office must not only be a specialist in his particular responsibility, but also must have a ready general knowledge of the other work of the department and of the other departments of the company.

In turn, the department, as an integral part of an operating company, depends heavily on the cooperation of the other departments in carrying out its assigned functions.

Often operating in a behind-the-scenes manner, the Land Department is very definitely playing its important role, from start-to-finish, in the business of producing and marketing natural gas and petroleum oil.

This chapter on Functions of the Land Department was prepared by J. M. Shields, manager, land and real estate department, Equitable Gas Company

San Diego G&E Has Standard Sets of Air Equipment for Street Crews

Strict Program for Inspection and Maintenance

EACH of the 31 work crews of San Diego Gas and Electric Company is equipped with a portable reciprocating air-compressor because the company believes that work crew efficiency is an important factor in the laying of gas mains, and crew efficiency can be increased through the use of compressed air power.

The capacities of most of the compressor units used by the 7- or 8-man crews is 105 cfm but other units of 160 and 210 cfm are in use. The 160 cfm capacity unit supplies ample power for all the pneumatic tools in operation by a crew at one time, while for overload periods, the company has recently added some 105 cfm vane-type rotary compressors.

Since the purpose of having air power available on all jobs is to replace manual operations wherever possible, first consideration must be given to the selection of compressor units which will provide the necessary power to do the job. A second consideration that San Diego is aware of is the selecting of pneumatic tools which will aid operations.

An illustration of this is the hydrohammer, a self-contained unit which is used for both cutting pavement and tamping. Being much heavier than the conventional paving breaker, it is mounted on wheels. The tool is practical in instances where greater power and faster work is important.

While the job of picking the right tool for the job at hand is important and always is given consideration by the company, there are limits to the number of tools the work crews can carry and, therefore, on anything but large jobs, a standard selection of tools has been found useful. The types of pneumatic tools commonly used by San Diego include demolition guns for paving breaking, clay spades, tampers and chipping hammers.

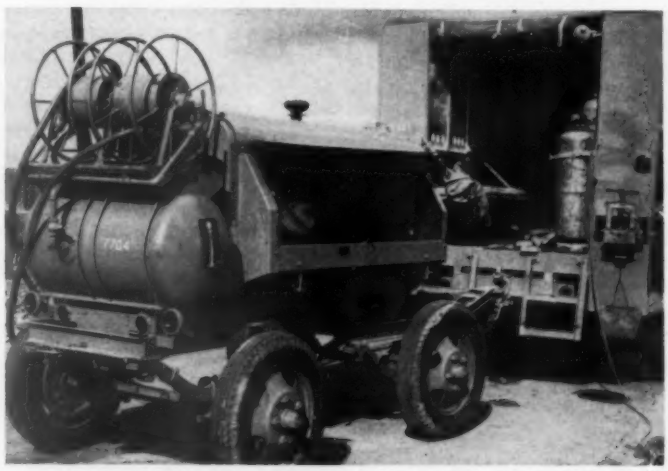
Earth boring with an air motor is another labor-saving operation and one which the company finds helpful in maintaining good public relations. Frequently, instead of cutting a trench for laying pipe, the work crews bore under a street or driveway and thus eliminate interference with traffic. The drill works inside a pipe which also carries water to the bit to soften the earth.

In order to keep its field power units in top condition and add to the life of the equipment, an exact service and maintenance program was adopted for air compressors by San Diego.

Because compressed air units are easily portable and readily applicable to most any work in the field, and because plant and tools are kept at full efficiency and used as much as possible, the company credits this air power with playing a vital role in its efforts to keep ahead of the ever-growing demand for gas.

Today, San Diego Gas and Electric Co. serves the entire county surrounding San Diego, an area of 4,258 square miles. For the past five years, the company has been laying mains at the rate of 100 miles a year. In 1953, 115 miles were installed to bring the total to 1,715. Over the five-year period, more than a quarter of the company's entire system has been built.

Air-operated tampers such as this one assure close compaction. Right, boring for pipe line under driveway avoids cutting trench.



This 160 cfm portable air compressor is the type most commonly used by San Diego Gas and Electric in field work.

Gas Explosion Liabilities Determined By Courts

by Leo T. Parker
Attorney at Law
Cincinnati, Ohio

THE courts recently have rendered several important decisions affecting gas companies, and a review of these decisions can offer readers the opportunity of avoiding similar law suits. A higher court has just handed down a decision which permitted the answering of a legal question submitted by a reader sometime ago. The reader had written:

"I am the president of a gas company situated in a relatively small city. Recently, we have had to defend two gas explosion suits filed by property owners and consumers. In one instance we were held liable for personal damages to the consumer and also for damage to his home. In the other case the court awarded the consumer damages for his personal injuries. What can we do to prepare to win such suits? Can we insert a clause in the contracts under which the consumers relieve our company from all injuries and damages resulting from explosions of gas which leaks from pipes and appliances owned by the consumer and located on his property?"

In Reeder v. Western Gas & Power Company, 256 Pac. (2d) 825, the testimony showed: a gas consumer made a connection of gas pipes in his home. Later, an employee of the gas company came into the home to turn on gas. At this time he was informed that the consumer had made the gas connection. The gas company's employee did not examine the connection and a few days later the consumer's wife told the employee that "she smelled gas." The employee said that the odor could have come from two sources: from his clothing, which was permeated with an odorant in the gas; or from the gas which he had let into the room while he was checking the burners.

A third source of the odor could have been gas escaping from a defective coupling under the sink cabinet, but the company's employee did not examine this connection. The odor of gas was strong and the woman opened the doors of the house to create a clearing draft of air. In less than an hour she opened a cabinet sink door and an explosion occurred. The woman received severe burns on her arms and face. An inspection of the premises was made, to determine the cause of the explosion, and it revealed a defect in the coupling made by the consumer. The leak was so pronounced that it could be located by the hissing sound of the escaping gas.

In view of this testimony the court held the gas company liable in heavy damages to the wife, to compensate for her injuries and also for damage to the dwelling. The higher court approved the verdict.

Inspection is important

This was so because the testimony showed that the company's employee knew that the consumer had made a gas connection in his own home, the wife told the employee she smelled gas, and the employee made no effort or inspection to discover from where the gas was leaking. The higher court said:

"The trial judge found that, although the employee had no actual notice of the defective coupling which the consumer had made, if he had checked he would have discovered the defect. If the gas pipes and fittings are the property of the consumer, the consumer, by application for gas service, assumes the burden of inspecting and maintaining the pipes and fittings on his premises, and the company has the right to assume that these duties have been performed by the applicant. But an important qualification to the general rule is that, if the company making the installation has actual or constructive knowledge of leaks in the system, then a duty to inspect may arise."

The court went on to explain that, generally speaking, a gas company is not required to examine or inspect the plumbing belonging to the owner of a building to which it furnishes gas. Yet, if the company knows at the time it turns on the gas, or, after turning on the gas, becomes aware that there are defects in the pipes to make them unsafe for gas, it then becomes the duty of the company to make such an inspection or investigation. Failing to do so, it furnishes gas at its own risk, and becomes liable for an injury resulting from that condition.

Hence, this new court decision clearly explained the law on the duty of a gas company's employees to test, inspect and repair gas pipes and appliances which belong to a gas consumer. And this is the law, most importantly, although a gas company has a contract with the consumer to the effect that the gas company shall not be liable for an explosion on the consumer's premises. In this case it was shown that a written contract existed between the gas company and the consumer which contained the clause:

"The Company shall have no duty to inspect such equipment or to stop deliveries because of faulty equipment or appliances or the negligent use thereof by the consumer."

Notwithstanding this clause, the court held that it would not protect the gas company against liability where the testimony showed that the explosion resulted from negligence of an employee, when the employee had good reason to believe that pipes or appliances on the consumer's premises leaked gas, and such employee turned on the gas, or failed to inspect and repair the leak, or failed immediately to turn off the gas. In this respect, the court said:

"We note appellant's (company's) contentions that this is a valid agreement between the parties, negating any duty at all to inspect. It is interesting that, in effect, this contractual provision limiting the duty to inspect is analogous to the general rule discussed above, i.e., absent knowledge of defects, a gas company is under no duty to inspect the customer's pipes for defects. Unquestionably, the contractual provision is valid to this extent, for it does no more than express the general rule. But we believe it would be unreasonable and against public policy to approve such a contractual limitation on the duty to inspect in cases where the facts themselves suggest a duty to inspect."

For comparison, see Moran Junior College v. Standard Company, 184 Wash. 543. In this case a property owner had made certain gas connections of which the gas company's employees had no knowledge. An explosion occurred. The higher court refused to hold the gas company liable because its employees had no notice or knowledge of defects. The court said:

"The company, having had no notice that the pipes were in defective condition on the consumer's own premises, had the right to assume, in the absence of such notice, that the owner of the building had seen to it that the pipes were in proper repair and that the gas could not escape therefrom."

Contract is void

Another higher court has held that a gas company cannot relieve itself from liability for gas explosions by having consumers sign contracts containing a clause that the gas company shall not be liable.

For example, in Fairfax Gas & Supply Company v. Hadary, 151 F. (2d) 939, it was shown that a gas company had its

(Continued on page 32)

Good Bond Market Seen for 1954

But Management Must Be Alert in Timing Proposed New Offerings

by John F. Falvey
Financial Editor

John F. Falvey

GAS industry management can look forward to a good bond market during 1954 in which to raise the sizable sums which they will need for financing continuing heavy construction requirements.

With a plentitude of funds available for investment, and with new issues promising to be in comparatively short supply, an imbalance is indicated which should favor corporate issuers.

A reasonably good guess is that security offerings (that is, bonds) in 1954 may fall as much as 10% to 15% below the 1953 level. Practically all of the drop would be traceable to smaller industrial needs, arising from completion of expansion plans and from the likelihood that the 5% to 7% decline in business anticipated in 1954 will discourage further capital expansion plans.

Since institutional investors will be saving at least as much as they did in 1953, they will be forced to seek an avenue for investing their funds. Anticipating this pinch, important segments of the insurance industry already have strongly urged the Federal Government to bring into the market another long-term bond issue.

Prospective corporate offerors of new bonds will have to keep in mind two possible, in fact very likely, developments. The corporate bond market may be subjected to a temporary period of unsettlement; and the Government presumably will come into the market with another long-term bond issue.

A period of unsettlement, or indigestion, is expected to develop in the bond market some time during the coming spring—in the period from April to June—due to the heavy flow of new corporate issues destined to come into the market during that period. Such a development should be purely temporary, however, and to be followed by a period of sound market recovery.

Much also will depend on the size and timing of the long-term issue which the Government should decide to market. Not too much worry is voiced on this latter score by experienced bond market observers, however, on the premise that the Treasury will follow considerably sounder policies in its next venture in long-term financing than characterized its initial endeavor along this line last spring.

A constantly rising bond market with constantly diminishing yields is not necessarily in prospect for the coming year. Rather, the outlook seems to favor a stable market on a favorable interest cost basis.

On the general economic outlook economists now are somewhat more apprehensive than they were a couple of months ago. All are thinking in terms of quick action by the Federal Government to offset any drastic decline in general business. Most of them think that such action will be necessary and they lean to the belief that the Administration will take whatever steps along this line as are shown to be needed.

The Administration seems to have abandoned any thoughts it might have had with respect to hardening the currency and indications are that it also will abandon any idea of balancing the budget if the general business picture shows any signs of worsening.

In their recent market action common stocks, as well as bonds, have been reflecting the widespread belief that business this year will not be up to the 1953 level. This has been indicated in better prices and lower yields for bonds, and in the declining market quotations for equities.

How much lower, if any, common stocks on the whole will go is anyone's guess at the moment, but it should be noted that the inherent market position of common stocks currently is sounder than it has been for some months. At last report the price-earnings ratio of a representative group of common stocks was at the three-year low of only nine times. This compares with 10.6 times which prevailed early in 1953. The change mirrors both an increase in corporate earnings and a decline in market quotations, the latter being traceable largely to investor concern that a further business drop is in the cards. For the record it might be pointed out that business has been on somewhat of a toboggan for several months, but nothing witnessed along this line to date could be said to justify the prediction of a substantial drop in corporate earnings.

Latest reported corporate earnings

(Continued on page 29)

INDEX OF YIELDS : SELECTED UTILITIES STOCKS

	Dec. 1953	Nov. 1953	Oct. 1953	Sept. 1953	Aug. 1953	July 1953	June 1953	May 1953	Apr. 1953	Mar. 1953	Feb. 1953	Jan. 1953
Natural Gas Transmission Companies	4.39%	4.44%	4.44%	4.90%	4.46%	4.76%	4.72%	4.34%	4.18%	4.04%	3.95%	4.04%
Natural Gas Transmission & Distribution Companies	5.54	5.49	5.58	5.74	5.13	5.41	5.55	5.28	5.06	4.91	4.91	5.02
Manufactured & Mixed Gas Companies	4.91	4.75	4.94	5.14	4.99	5.06	5.08	4.80	4.73	4.63	4.65	4.87
Class "A" Electric Companies	5.10	5.15	5.14	5.41	5.27	5.41	5.53	5.18	5.14	4.97	5.05	5.08
Class "B" Electric Companies	5.23	5.14	5.37	5.61	5.50	5.41	5.68	5.35	5.06	4.93	5.08	5.19

This is a straight arithmetical index of comparative yields obtainable on a selected group of gas and electric utility industry common stocks.

The companies comprising this index have been selected by the AMERICAN GAS JOURNAL as providing a representative cross-section of each industry, from the standpoint of geographical diversification and of the relative importance of the individual companies in their areas.

No effort has been made to weight the average to give effect to changes in capitalization or in dividend rates because the yields afforded on the issues reflect such changes. The index is designed to show the rate of return and not necessarily market movements on the stocks comprising it.

This index is compiled from: natural gas transmission companies, 5; natural gas transmission and distribution companies, 5; manufactured and mixed gas companies, 4; class "A" electric companies, 4; class "B" electric companies, 5.

News of the Gas Industry

More Natural Gas in View for Northeast

Transcon Plans NY-Area Expansion

Transcontinental Gas Pipe Line Corp., which supplies natural gas to the metropolitan New York-New Jersey-Philadelphia areas, has announced plans for increasing deliveries to these markets through underground storage facilities in Pennsylvania and expanding its pipe line capacity.

Beginning in the fall of 1954, winter deliveries will be boosted by approximately 135 MMcf per day from storage, while an additional 130 MMcf will become available from the enlarged pipe line on a year-round basis beginning in the fall of 1955. This expansion will lift Transcontinental's capacity to about 820 MMcf of gas daily.

Transcontinental's plan will be the subject of an application to Federal Power Commission for a certificate of convenience and necessity which, when granted, will make it possible for the company to meet the needs of the market now served. The proposal has been submitted to all utility companies in the metropolitan area which it serves, and contemplates the following:

An arrangement with Texas Eastern Transmission Corp. which will enable Transcontinental to store gas in the Oakford reservoir near Pittsburgh and draw it into its own system, as needed, for winter delivery to customers via an interconnection with Texas Eastern at Linden, N. J.

A new $80,000,000 construction program to expand the authorized capacity of its 1840-mile Texas-to-New York pipeline to 685 MMcf per day. This would be accomplished by looping the line for 533 miles with 30- and 36-inch pipe and by building additional compressor stations.

"The plan has been designed in consultation with the utility companies in this area to meet their estimated future needs on the most economical basis," Tom P. Walker, president of the company, said.

"Under the storage plan, Transcontinental will have approximately 12 billion cubic feet of gas in storage, which will add another 135 MMcf per day to the company's delivery capacity during the winter months, beginning November 15, 1954. It will not be necessary to purchase additional gas for this service as quantities available during the summer will be diverted to storage for winter delivery, when demands for house-heating exceed the ability of the pipe line to deliver sufficient gas.

"Assuming no undue delay in securing [FPC] approval, Transcontinental would be able on peak days to bring 690 MMcf per day into the metropolitan markets by November, 1954, and a total of 820 MMcf per day by November, 1955.

"Negotiations are under way for the purchase of sufficient quantities of gas from locations and at prices which will affect our present cost structure the least. Assurances have been obtained from bankers that within the limits of proposed rates the new facilities can be financed."

TGT Refiles Proposal for NY Area

Tennessee Gas Transmission Co. has announced the refiling of an application, with Federal Power Commission, to build facilities through which natural gas service would be extended to the New York metropolitan area. The application replaced one filed in November but recently withdrawn for modification.

The company renewed its request for authority to build a 243-mile, 24-inch pipeline from its Hebron, Pa., storage field eastward across Pennsylvania, New Jersey and New York to near Greenwich, Conn. Through a connection with this line near White Plains, N. Y., and a 28-mile spur line to near Newark, N. J., the company proposed to deliver 90,000 Mcf per day.

Included were 30,000 Mcf each to Public Service Electric and Gas Co. of New Jersey and the Consolidated Edison Co. of New York, Inc.; 25,000 Mcf to Brooklyn Union Gas Co., and 5,000 Mcf to Long Island Lighting Co. Amounts were the same as in the earlier application, except for a 20,000 Mcf increase to Consolidated Edison.

Also unchanged was a proposal to sell a total of 39,000 Mcf to five existing customers, including New York State Natural Gas Corp., Iroquois Gas Corp., Pennsylvania Gas Co., Inland Gas Corp. and Louisville Gas and Electric Co.

Also renewed was the company's offer of an important new storage service on an option basis to its new customers in the New York area. They could deliver gas in off-peak periods to Tennessee Gas, which would store it and re-deliver it to them at times of heavy demand to avert cold weather shortages. This service would be provided from the company's Hebron field, already in use, and from the nearby Harrison field, for which authority to acquire an interest in and develop was sought in a second application re-filed in December.

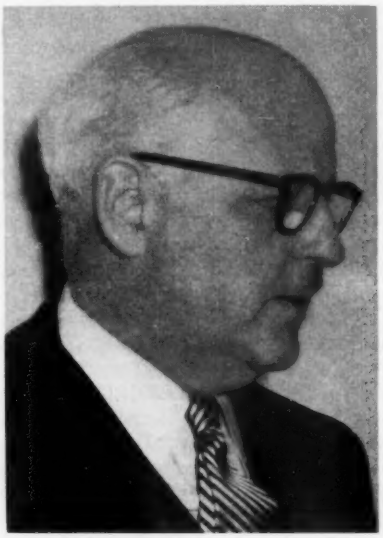
The proposed construction will provide the company with 36,000 Mcf per day unallocated capacity in the Hebron-Greenwich pipeline, the application stated, which it proposes to sell in its New York rate zone. Some or all of this may be sold to four companies in the Philadelphia area; the Philadelphia Electric Co., Philadelphia Gas Works Co., South Jersey Gas Co. and Delaware Power and Light Co.

Three of the companies have contracted for their share of the gas and the fourth has signed a letter of intent. Under the contracts, these companies are to work out all such arrangements with others as they deem necessary in order for them to receive the gas contracted for. Since none has yet worked out such arrangements, no proposal was in the application to sell gas to them.

Whether this 36,000 Mcf of gas per day is to be sold to these companies in the Philadelphia area or to others in the New York rate zone will be covered in an application to be filed later, it was stated.

ELLIOTT TAYLOR

Elliott Taylor, publisher and editor of AMERICAN GAS JOURNAL, died at his home in Gettysburg, Pa., on Christmas



Elliott Taylor

Day at the age of 55. Death came suddenly.

Mr. Taylor had been a vigorous writer on gas industry policy matters for more than 25 years. Since 1949 he was publisher and editor of the JOURNAL, oldest publication in the gas industry.

Previously he was editorial director of *Gas* and *Butane-Propane News*. ". . . I have lost a good friend," cabled Jay Jenkins, publisher, from Honolulu.

Mr. Taylor's earlier associations with the publishing world included *Domestic Engineering* and *California Homes*.

Born in Sewickley, Pa., Mr. Taylor attended school there and Pennsylvania State College at which two of his sons are now students.

During World War I, he left his senior year classes at Penn State to join the Balloon Corps of the A.E.F. in France.

The spectacularly-popular book, "Address Unknown," was a collaboration of ideas by Mr. and Mrs. Taylor, written by Mrs. Taylor, and published in 1938. This book is a series of letters to and from a man in Germany during that period, culminating in the return to San Francisco of a letter with the ominous official German stamp, "Address Unknown."

"His genuine interest in the gas industry and his thoughtful consideration and appraisal of its problems, as evidenced by his editorials, were helpful, challenging and stimulating," Frank C. Smith, president, Houston Natural Gas Corporation, wrote upon learning of Mr. Taylor's death.

Numerous other expressions from

members of the industry echo Mr. Smith's summation, "I feel that the gas industry has lost a good friend, as I have."

"He coupled with his brilliance as a writer, the courage and enthusiasm so necessary to be a constructive force for the good of the industry," said H. Leigh Whitelaw, managing director, Gas Appliance Manufacturers Association.

Before his association with AMERICAN GAS JOURNAL, while devoting himself to his farm near Gettysburg, Mr. Taylor guided the establishment of a highly-successful rural school consolidation. This school unit has since been regarded as a model on which other consolidations have been patterned.

Services for Mr. Taylor were held December 28, at his beloved Lutheran Church, Biglerville, Pa., and were conducted by his friend, Rev. Henry W. Sternat. Interment was in Gettysburg National Cemetery.

Mr. Taylor is survived by his widow, Kathrine Kressmann Taylor; three sons, Thomas, Douglas and Jonathan; a daughter, Mrs. Michael Chase; and a sister, Clara.

Gas Sales Decline In October

Total sales of the gas utility industry were 4,021 million therms during October, 1953, a decline of 1.3% from October 1952. This represents the first time since May, 1952, that a decline over the previous comparable period occurred. The drop in sales can be attributed mainly to the warm weather experienced in all sections of the country. There were 45% less degree days this October than a year ago. The lower house-heating demand due to the mild weather more than offset the rise in industrial sales. The Association's monthly index of total gas utility sales was 163.4% of the 1947-1949 average.

Natural gas sales aggregated 3,800 million therms, 1.5% less than last October. Manufactured and mixed gas sales rose 2.8%, to 221 million therms. Mixed gas sales rose 16.9%, to 172 million therms.

Sales of the entire gas utility industry for the 12-month period ending October 31, 1953, were 56,150 million therms, representing a 9.3% increase over therms sold in the comparable period a year ago. Natural gas sales in the last 12 months were 52,893 million therms, 10.1% more than the 48,038 million therms sold in the 12 months ending October, 1952. Manufactured and mixed gas sales declined 2.4%, to 3,257 million therms although mixed gas sales rose 14.3% to 2,313 million therms during this cumulative period.

Kans Office for Northern Producing

Northern Natural Gas Producing Co. has opened a new district office in Wichita, Kans., which will supervise all exploratory and producing activities for the company in Oklahoma, Kansas and eastern Nebraska. L. B. Fugitt, district geologist in charge of the office, formerly held a similar position at the company's Amarillo, Tex., office which has been closed.

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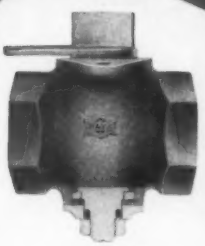

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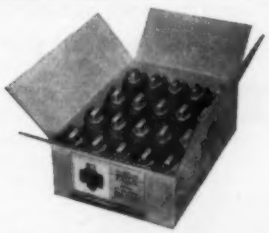

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SoCounties Co Sets Up New Dept

Southern Counties Gas Co., Los Angeles, has established a new management department to be known as the construction and distribution department.

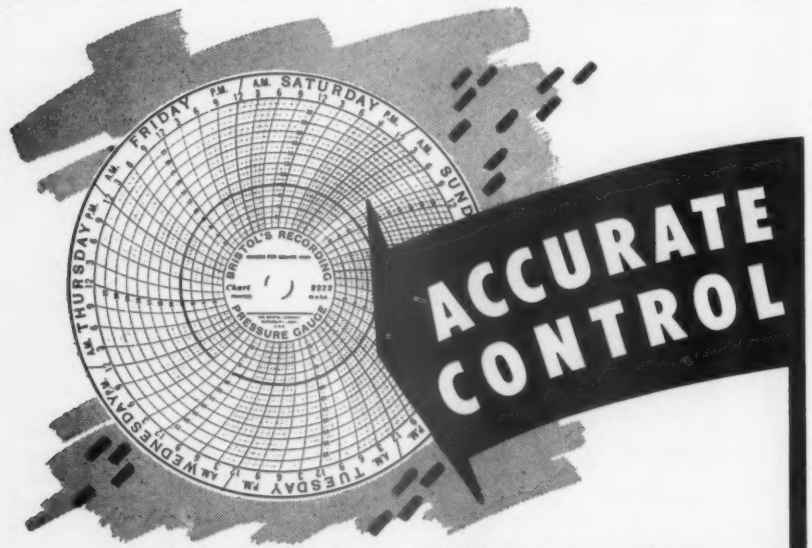
The new department has taken over the responsibilities of the engineering department, and additional functions may be assigned later. Meanwhile, the engineering department designation has been discontinued.

In connection with the reassignment of managerial responsibilities, the following personnel changes also were announced:

Vice president F. A. Hough will move into the position of technical consultant and he will handle studies and analyses on behalf of the principal management departments. He will also continue to head the research currently being conducted under American Gas Association for revision of the industry's Pressure Piping Code.

Jay Davis, Jr. has been appointed manager of construction and distribution of the new department. He will be responsible for the design, construction, operation and maintenance of construction and distribution facilities, and will report to the vice president and general manager.

Monte M. Temple has been promoted to superintendent of operation. He will be responsible for the staff supervision of construction and distribution operations in the company's divisions, as well as for the functioning routine of the new department.



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For horizontal or vertical connections, with or without removable valve pocket. Available with either Spring or Dead Weight adjustment. With or without Mercury or Dead Weight Safety Seal or diaphragm operated relief valve.

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Exec Changes At San Diego G & E Co

E. M. Klauber, after 43 years of service with San Diego Gas & Electric Co., has retired from his position as chairman of the board of directors and chief executive officer, effective January 1, 1954. He will remain as a member of the board of directors and as a member of the executive committee which will include E. D. Sherwin and H. G. Dillin.

Mr. Sherwin, president, will assume the duties of chief executive officer formerly held by Mr. Klauber. By action of the board of directors, at its December meeting, the office of chairman of the board has been abolished.

Also, it was announced that H. G. Dillin was elected to the newly created position of executive vice president and to membership on the board of directors and Ralph J. Phillips was elected vice president in charge of sales, succeeding Mr. Dillin.

Mr. Klauber, who began with the company as a salesman in 1911, was elected president in 1946 and became chairman of the board in 1949.

Mr. Sherwin has been with the company for 33 years and was elected to the presidency in 1951. He became a member of the board of directors in 1944.

Mr. Dillin became vice president in charge of sales in 1949, while Mr. Phillips was named manager of sales in 1952.

Tippy Is Commonwealth Serv ExecVP

William B. Tippy, a vice president of Commonwealth Services, Inc., since October 1947, has been elected executive vice president of the company.

Mr. Tippy has been active in public utility operations since 1932, and previously held executive positions with Consumers Power Co. in various Michigan divisions.

General Controls Co Adds New Plant

A new plant which will be used entirely for expanded manufacturing of appliance controls was dedicated recently in Burbank, Cal. by General Controls Co.

A leading feature of the two-day plant dedication and open house ceremony was a 240-foot panoramic exhibit showing the numerous functions automatic controls have come to perform.

In dedicating the new plant, General Controls' president, W. A. Ray, illustrated the changes which automatic controls have made since 1930 when he launched the company.

The 120,000 square foot plant was designed and built for the Grayson-Greenamyer Appliance Controls Div., and is located near the company's main plant and headquarters in Glendale.

LPGA Exhibit-Space Well Supported

Exhibit space for the Liquefied Petroleum Gas Association's 1954 convention and trade show is going fast, according to J. R. Herrin, Coastal Butane Gas Co., Summerville, S. C., chairman of the convention committee. As of the early part of December, he announced, nearly 90% of the 213 booths to be included in the display of appliances and equipment were under contract. The LPGA convention is scheduled for May 9-12, at the Conrad Hilton Hotel, Chicago.

Good Bond Market Seen for 1954

(Continued from page 25)

were higher than in the early months of 1953, notwithstanding a drop in industrial production already in evidence in the third quarter and, despite intensifying competition, stemming in part from a return to a buyers' market. Corporate earnings before taxes reached a new high record for the 1953 calendar year, and profits after taxes are believed to have been exceeded on only one occasion.

The improved corporate profits recently registered were bolstered by an estimated $2.5 billion of inventory profits, on an annual basis. A period of possible inventory losses in 1954, together with declining sales and increasing competitive pressure, represents a combination which could send earnings this year into a tail-spin of currently unpredictable extent; but such a development in itself should not alter the present flow of dividends to shareholders. In fact, the distributions could be stepped up somewhat, since corporate needs for funds for capital expansion are expected to be lessened. For all of 1953 the ratio of corporate dividend payments to earnings is believed to have approximated the 45% recorded in the initial nine months. The percentage is sufficiently low to permit directors adequate leeway in ordering future dividends.

A paradox of the stock market has been the strong action of "institutional type" shares. These have reached new high levels during recent months, in contrast to the approximately 5% decline from early 1953 quotations experienced by the general body of equities. Bulk of the buying of better grade shares has been for the account of pension funds and for the fire and casualty insurance companies. Purchases of common stocks for institutional accounts, however, currently are estimated at not more than about $500 million a year.

A natural concomitant of a good bond market this year should be increasing demand for preferred and for better grade common stocks, as institutional investors surrender something in the way of investment quality to increase somewhat the income from investments.

The circumstances augur quite favorably for utility managements constrained by necessity to raise considerable long-term expansion funds this year. But gas company managements must be on the alert in planning the timing and scope of their borrowings.

Generous use of short-term bank accommodation might best be resorted to, if the companies are not prepared to come into the market in early future weeks. These short-term funds should provide management with the latitude to carry through a period of bond market weakness this coming spring which is expected to result from a glut of corporate offerings.

In this way they will not whipsaw themselves, either through no planning or through unwise planning, into having to take whatever they can get in the way of bond market terms when the funds are urgently needed. Rather, they will have plenty of latitude in awaiting the anticipated return later in the year of more propitious market conditions, in the event the anticipated period of momentary weakness develops.

Norwalk Valve Expands Main Plant

Norwalk Valve Co. has opened a new assembly section in its main plant in South Norwalk, Conn., that will be used for the complete assembly and testing of all the smaller regulators and check valves which the company manufactures.

The expansion was made in a new addition to the main building to facilitate a more rapid assembly of regulators and check valves.

Selas Forms Texas Subsidiary

Selas Corporation of America, processing engineers and manufacturers, Philadelphia, has formed a subsidiary, Selas Constructors, Inc., Houston. Operation of the new company in its Houston plant, under a Texas charter, began January 1.

Frederic O. Hess, president of both corporations, announced that Clare Construction Company, Houston, has been acquired as the nucleus of Selas Constructors, Inc., and that the former owner, R. T. Clare, Jr., will be vice president and general manager.

Kurt W. Fleischer, manager of the Selas fluid processing division, also will be responsible for designs in the new corporation as engineering vice president.

The purpose of the new company is to facilitate fabrication, erection and service of Selas Corporation of America designs and developments for the petroleum and petro-chemical industries of the Southwest. A heavy backlog of orders and increasing acceptance of Selas' Gradiation heaters and fluid processing equipment is responsible for this expansion, which will benefit industrial customers by important savings in freight, time and service.

Chicago Edison Sets Up Gas Co

Articles of incorporation to organize Northern Illinois Gas Co. as a subsidiary of Commonwealth Edison Co. of Chicago were filed recently with the Illinoias Secretary of State. The new company will own and operate Edison's gas properties.

Arthur F. Benson

Arthur F. Benson, vice president of the American Meter Company, died on November 30, in Warren Pa., at the age of 58.

Mr. Benson, who attended Lehigh University and Massachusetts Institute of Technology, was engaged in sales and engineering work in Seattle, Wash., from 1920 to 1929. He became associated with American Meter in 1930, doing engineering and sales work with the Metric Metal Works, Erie, Pa. In 1943 he was made chief engineer and in 1947, was appointed chief engineer and vice president-production and research. He was elected vice president-engineering in 1950.

His association affiliations included membership in Pacific Coast Gas Association, Gas Appliance Manufacturers Association, Southern Gas Association, Liquefied Petroleum Gas Association, and Canadian Gas Association. He was also a member of the measurement committee of the American Gas Association operating section.

Mr. Benson was an authority on displacement and orifice meter measurement and in demand as a speaker on all phases of technical and scientific developments in instrumentation for the gas and oil industries. He was associated with the AGA-ASME joint committee on fluid meters on a research project of testing large diameter gas lines at Refugio, Tex., and with orifice meter disturbance tests being conducted at Rockville, Md., in collaboration with the United States Bureau of Standards. Also, he was actively connected with the planning and conducting of the Southwestern Gas Measurement Short Course, University of Oklahoma, and the Appalachian Gas Measurement Short Course.

Reginald H. Hargrove

Reginald H. Hargrove, 57, president, Texas Eastern Transmission Corp., was killed in an airplane crash near Shreveport, La., Jan. 10.

Herman E. Philipp

Herman E. Philipp, 47, senior gas engineer with the New York Public Service Commission, died on November 28.

Mr. Philipp had been with the Commission for the past 17 years and was widely known in the gas industry. Prior to his employment with the Commission he had worked for gas utilities and private engineering firms in New York, New Jersey and Connecticut.

Howard Fleming Weeks

Howard F. Weeks, a former writer and editor of various publications in the gas industry, died January 3, at the age of 50.

Born in New York City in 1903, Mr. Weeks attended public schools in White Plains, N. Y., and Brown University. From 1925 to 1926 he was news editor for *Gas Age*, and from 1926 to 1929 he worked on *American Gas Association Monthly*.

In the years between 1929 and 1948 Mr. Weeks held various editorial positions, ending with editorial directorship of Consolidated Gas Co., later, Consolidated Edison Company of New York.

From 1948 to 1952 he was employed by AMERICAN GAS JOURNAL as an associate editor. From 1952 until the time of his death he worked on the staff of *Dun's Review and Modern Industry*.

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MEN AT WORK

Sweatt Is Honeywell Board Chairman

Harold W. Sweatt, president of Minneapolis-Honeywell Regulator Co. since 1934, was recently elected chairman of the board, succeeding Mark C. Honeywell, who was named honorary chairman. Paul B. Wishart, vice president and general manager of the company, was elected to succeed Mr. Sweatt as president.

At the same time, Tom McDonald, vice president in charge of sales, and A. M. Wilson, vice president in charge of the Aeronautical Div., were elected directors.

The top-level changes in the management of the company coincided with the retirement of, in addition to Mr. Honeywell: W. L. Huff, director, executive vice president and former treasurer; R. P. Brown, vice president and chairman of the board of the Industrial Div.; George A. DuToit, vice president in charge of manufacturing, and L. Morton Morley, vice president and formerly in charge of sales for the Industrial Div.

Mr. Honeywell, Mr. Huff and Mr. Brown will continue as directors.

Mr. Sweatt, president of the company for nearly two decades, started with a predecessor company, the Minneapolis Heat Regulator Co. Elected a vice president of the family-owned firm, he demoted himself to clerk, worked in the factory and office, and as a salesman. He served as vice president until his election as president.

The fourth man to hold the presidency of Honeywell, he was named to a newly-created managerial post, vice president and general manager, a year ago. He became superintendent of manufacturing in 1943, factory manager in 1945, vice president in charge of manufacturing in 1946, and vice president and general manager in 1952.

Mr. McDonald was president of his own company prior to joining Honeywell in 1931 as manager of its Toronto office. He was named vice president in 1938.

Mr. Wilson joined the company in 1941 as assistant to the president. He has been a vice president since 1943.

Two Promotions at Equitable Gas

Equitable Gas Co. has announced that James H. Marks, general superintendent of distribution, and Armand F. Hoehle, assistant general superintendent of distribution, have been appointed to the positions of operating manager and general superintendent, respectively.

James H. Marks

Armand F. Hoehle

Mr. Marks, as operating manager, will have charge of the automotive equipment, distribution, compressing stations, land and real estate, production and transportation and system operation departments for Equitable. Mr. Marks joined the company in December, 1935, as a cadet engineer in the operating manager's department.

Mr. Hoehle, as general superintendent of distribution, will be in charge of all distribution work in Pennsylvania and West Virginia. Mr. Hoehle entered the company in October, 1926, as a cadet engineer.

Beckman Is PG&E Gas Operations VP

The board of directors of Pacific Gas and Electric Co. has appointed Philip E. Beckman vice president in charge of gas operations and named George H. Hagar, who became a vice president last July, vice president in charge of electrical operations.

Mr. Beckman's position as gas operations vice president was created by the board to effect a reorganization of the department upon the retirement of Raymond S. Fuller, manager of gas operations, and Frederick F. Doyle, general superintendent of gas supply and control. At the same time, the retirement of W. G. B. Euler, executive vice president and a director during the past five years, has been announced, effective December 31.

Mr. Beckman, who joined PG&E in 1921, has been general superintendent of technical services in the gas department since 1950.

The company also has announced the appointment of Harry A. Lee as San Francisco division manager to succeed Grover S. Tracy who retired in December. Mr. Lee

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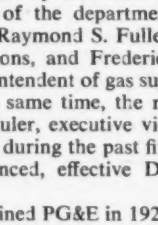

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has been San Francisco division sales manager since 1946 and has been with the company for 31 years.

Mr. Tracy, who retired after 48 years with the company, in 1924 became the first manager of the division's service bureau. He was named assistant division manager in 1945 and became manager in 1947.

Munroe Is Rocky Mountain Assn Pres

At its annual meeting held in Denver, Colo., in December, the Rocky Mountain Gas Association elected officers of the association for 1954. Those elected were: President, Roy G. Munroe, Public Service Company of Colorado; Vice president, William Van Genderen, Van Genderen Heating Co.; Vice president, L. D. Warner, The Warner Co., Inc.; Secretary-treasurer, S. J. Neely, North Denver Furniture Co.

Roy G. Munroe

Also, elected as additional directors of the association were: G. Meredith Musick; F. V. Wedlick, and Frank L. Welle.

Williamson Elected SoProdCo Pres

Southern Production Co., Inc., has announced the election of Roy C. Williamson as president, succeeding C. T. Chenery who has held the position of both chairman of the board and president. Mr. Chenery remains chairman of the board.

Mr. Williamson joined Southern Production in 1943 and was elected a director and vice president in charge of production in 1947. Previous to 1943 he had been associated with Pure Oil Co. and Lion Oil Co.

Maxwell Named VP of Rockwell Div

F. P. Maxwell has resigned as president of Acro Manufacturing Co. to accept the newly created position of vice-president of the Power Tool Div., Rockwell Manufacturing Co.

Mr. Maxwell will remain on the board of directors of Acro, according to W. F. Rockwell, president of Rockwell Manufacturing, and chairman of the board of Acro.

In his new position with Rockwell, Mr. Maxwell will have charge of all activities for the Power Tool Div. He has worked for the company previously in the sales organization and as assistant to the vice-president of sales in 1946-47.

In 1940 he became operator and part owner of The Maxwell Co., manufacturers' agents and operators of a subsidiary called the Meter and Regulator Repair Co.

Benjamin Is Stone & Webster Pres

George H. Clifford, president since 1929 of Stone & Webster Service Corp., was named chairman of the board, and R. N. Benjamin, vice president since 1948, was elected president at a recent directors' meeting.

Mr. Clifford has been associated with Stone & Webster interests since 1901, becoming the first president of the Service Corporation. Mr. Benjamin has been engaged in corporate and financial work for Stone & Webster, Inc., and its affiliates since 1927.

Proske Is Rockwell Meter SalesRep

H. O. Proske, service manager for Rockwell Manufacturing Company's Meter and Valve Div., has been named national representative specializing in gas meter sales promotion.

In his new position, Mr. Proske will supervise sales and production liaison between the firm's gas meter manufacturing plants at Pittsburgh and DuBois, Pa., and the Rockwell field sales force and sales management.

Mr. Proske joined Rockwell in 1937 as a sales engineer and was promoted to service manager in 1952.

Stark Is Peerless Mfg Eng Dir

The Peerless Manufacturing Corp. has appointed Marvin Stark director of engineering and, in this position, Mr. Stark will have full charge of all engineering and development activities. He spent five years with Lennox Furnace Co., as research engineer. In 1952 he joined the Herman Nelson Div., of the American Air Filter Co.

JOHN H. ADAMS has been named assistant chief engineer, *Dollinger Corp.*

FRANK H. ALLEN is now in sales organization, *American Meter Co.*

WILLIAM R. BEARDSLEY has been named vice president of *United Producing Co., Inc.*, subsidiary of *United Carbon Co.*

STEPHEN C. BIXBY is now operation manager, Appliance Controls Div., *Minneapolis-Honeywell Regulator Co.*

WILLIAM N. DONACHY was appointed to sales engineering staff, *American Meter Co.*

JOHN R. HAMILL has been named manager, Kansas City, *Worthington Corp.*

J. N. HOLLAND is now sales engineer, Meter and Valve Div., *Rockwell Mfg. Co.*

LEE HOLT has been named sales engineer, *American Meter Co.*

H. F. JACOBSMEYER is now on the sales staff of Grayson Controls Div., *Robertshaw-Fulton Controls Co.*

C. J. KRIBS has been made assistant to the manager, Southern Div., *Westcott and Greis, Inc.*, subsidiary of *American Meter Co.*

ERICK LARSON has severed his relationship with *Gas Construction and Service Co.*

JOSEPH LIND has become a sales representative, *Burdett Mfg. Co.*

ARNE LOVENDAHL was appointed manager, Philadelphia area, *Combustion Control Corp.*

PAUL C. MCCONNAUGHEY was appointed sales manager, Gas and Coke Div., *Koppers Co., Inc.*

CLAUDE A. MULLIGAN was elected a vice president, *Consumers Power Co.*

CHARLES W. PUNTON is now director of engineering, *Mine Safety Appliances Co.*

ANDREW SESOCK has been named to sales engineering staff, *American Meter Co.*

JAMES H. STOKER has been promoted to assistant manager, land and leasing, *Northern Natural Gas Producing Co.*

WILLIAM SUMRALL, JR., has been added to sales staff, *American Meter Co.*

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Gas Explosion Liabilities Determined By Courts

(Continued from page 24)

consumers sign contracts containing this clause:

"Company shall not be liable for property or personal injury resulting from leakage, fire, explosion, or from any other cause whatsoever."

An explosion occurred when gas leaked from pipes on a consumer's premises. The testimony proved that an employee of the company had knowledge that the consumer's pipes were defective but failed to inform the property owner. In view of this testimony the court held the gas company liable, saying:

"Even then, if it be the rule that a purely private company may, by contract, generally relieve itself of liability for mere negligence, such a rule, we think, should have no application to the facts of the instant case. To us, the conduct of Fairfax (gas company) may certainly be called gross negligence; perhaps we may go further and state that it closely verges on, if it does not actually attain, the quality of wantonness. Our social conscience is shocked at the idea that Fairfax should be here permitted to hide behind the beneficent shield of contract. Common humanity would seem to require, contract or no contract, that Hadary (consumer) should be apprised by Fairfax of what it knew was a danger, both real and imminent."

No consideration

Modern higher courts consistently hold that no contract is valid unless there is valid "consideration." Hence, neither a gas company nor the owner of a building to which gas is supplied, is under any obligation to fulfill a mere promise if the other party or gas consumer gives no consideration.

For example, in Hefferin v. Scott Realty Company, 254 Pac. (2d) 194, the testimony showed as follows: a building owner and landlord leased the building to a restaurant owner. The lease was for a definite period of three years and contained no provisions with reference to making repairs. Several weeks later the restaurateur considered the kitchen to be so hot and suffocating as to prevent her from continuing to conduct the restaurant until some more ventilation was furnished. So she shut down for a day or two, interviewing the landlord who stated that he would see what he could do. The landlord promised to repair the ventilating system so that it would conduct the fumes away from the kitchen; but he failed to fulfill his promise. In the meantime, relying on the landlord's promise to fix the ventilating system, the restaurateur re-opened the restaurant and soon afterward was stricken with an illness which she alleged was the result of the gas fumes and lack of oxygen in the restaurant. The restaurant owner sued both the gas company, which supplied the gas, and the landlord for heavy damages. In holding the restaurateur not entitled to any damages, the higher court said:

"In this case plaintiff, restaurateur, does not rely upon any contract contained in the lease between the parties but asserts that the defendant was liable under the promise which it made on or about March 9, to install a new ventilating system. There was no new consideration for any such promise or contract. The promise to make repairs during tenancy must be supported by a new consideration. 16 Ruling Case Law, 1033 553: 'It has frequently been held that the landlord is under no obligation to make repairs, unless such a stipulation is made a part of the original contract, and that any subsequent promise to make repairs, founded merely on the relation of the parties, and not one of the conditions of the lease, is without consideration, and for that reason creates no liability.' "

Also, this court explained that a promise made by a gas company's employee does not bind or otherwise obligate the gas company first, if the employee is without proper authority to make contracts for his employer; or, if an authorized official of the gas company makes a promise to a gas consumer and the consumer pays no money, or otherwise gives some "consideration" to the gas company.

Not general duty

The same relative law applies between a gas company and a person who has no contract relations with the company.

In Atlanta Gas Light Company v. Jennings, 72 S. E. (2d) 735, decided just recently, the testimony disclosed that, on a certain night an explosion in a gas company's plant disabled its entire plant so that there was no service of gas in the house where the plaintiff boarded. The flames in a gas floor-furnace near the head of the bed in which the plaintiff had already retired were extinguished, that as a result thereof the plaintiff's feet became frozen during the night, and he is now in the hospital where it is expected that one or both of his legs will have to be amputated.

The plaintiff had no contract with the gas company but was a roomer in the home of the gas consumer. The higher court refused to hold the gas company liable, saying:

"The breach of duty alleged is the failure of the company to supply gas. This duty is owed not to the entire public but only to those who apply for service and who agree to comply with the reasonable rules and regulations of the company. Thus the defendant (gas company) owed the plaintiff no duty to supply gas. The fact that the defendant was obligated to furnish gas to the owner of the home where the plaintiff boarded, or the fact that the plaintiff might have a claim against his landlady for failure to provide him with heat does not afford him any right of action against this defendant."

For comparison, see Huckabee v. Grace, 48 Ga. App. 621. Here a boarder sued a gas company for its failure to furnish gas to his landlady. The public utility had no contract to furnish the boarder, personally with gas. In holding the gas company not liable, the higher court said:

"If there is no duty to do an act, the nonperformance of that act will give rise to no right."

Stanolind May Buy Hydrocol Plant

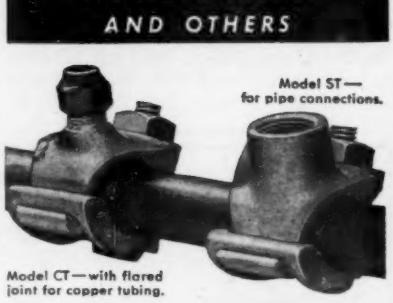
The synthetic gasoline plant of Carthage Hydrocol, Inc., at Brownsville, Tex., may be acquired by the Stanolind Oil and Gas Co., Guy Gabrielson, president of Carthage Hydrocol, has announced.

He stated that Stanolind, an affiliate of Standard Oil Co., Ind., had signed an agreement, that may lead to the acquisition of Carthage, with Reconstruction Finance Corp., which holds a first mortgage of $17,750,000.

Quick easy way

to make gas connections

FOR LAUNDRIES, DRYERS, REFRIGERATORS, AND OTHERS



Model ST—for pipe connections.

Model CT—with flared joint for copper tubing.

SKINNER-SEAL SADDLE TEE—for making gas and water connections. No pipe cutting or threading. Quick. Easy. Cuts costs. For gas refrigerators, home laundries, heaters, etc. Write for circular.

Approved by Underwriters' Laboratories, Inc.

M. B. SKINNER CO.
SOUTH BEND, 21, IND., U. S. A.

Advantages of Adequate Rates for Interruptible Industrial Gas

(Continued from page 17)

be gas sold to large consumers through a few meters and would entail very little operating expense or overhead, since all the facilities up to the consumers' premises would normally be required for serving the domestic heating customers. It would seem obvious, therefore, that such a large volume of gas could be sold for only a small margin of profit as compared to the other classes of service.

Suggested interruptible gas rates

The experience of other gas companies should set the pace for experimental steps toward formation of equitable interruptible industrial gas rates. These rates should be low enough to attract the kind of industrial load the utility wants, and also high enough to give a reasonable return based on the type and nature

(Continued on next page)

CHART NO. 1

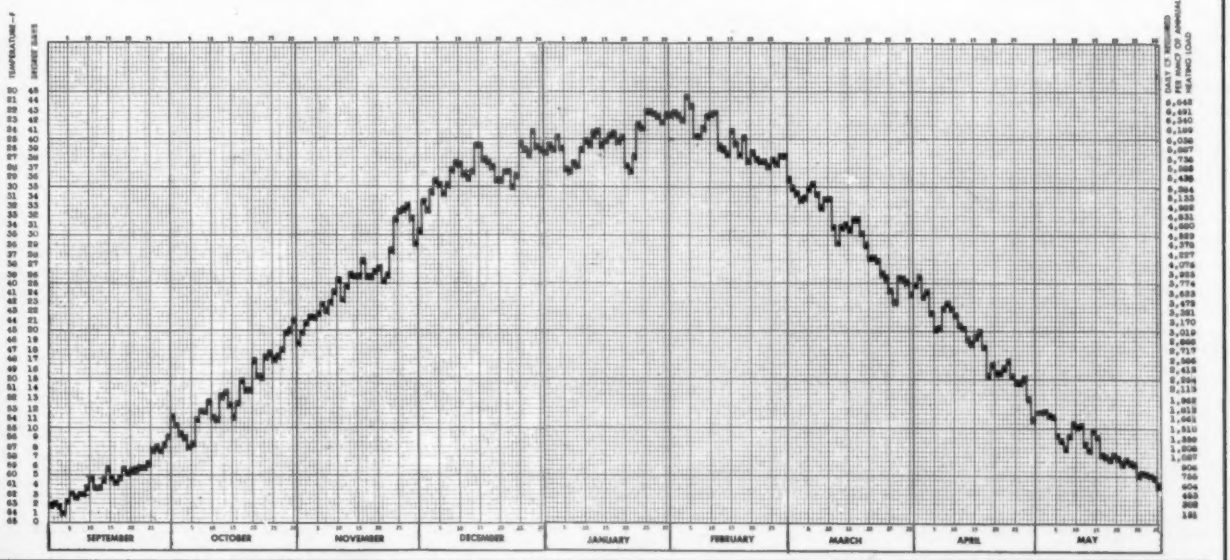
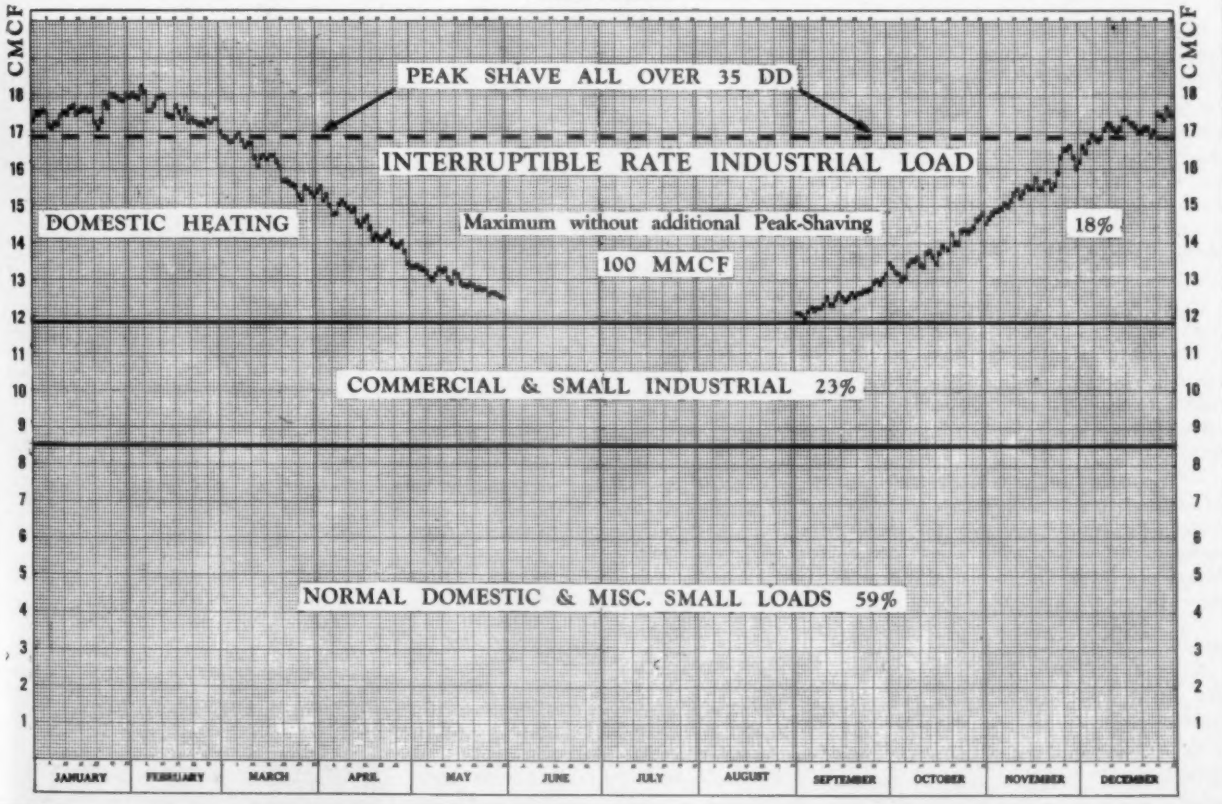


CHART NO. 2



of the service. If the utility expects to reach the ready-made market now served by LP gas, it will have to sell the gas well under the delivered cost of the LP gas. In many areas of New England, LP gas can be delivered at an average annual cost of approximately 12¢ per therm.

One large utility that has been distributing natural gas for only a few years established interruptible industrial rates almost from the start of their operations. These rates were adjusted in 1953 because of increased costs and are:

First 5,000 therms or less per month . $561.19 minimum
Next 5,000 therms per month ..... .055 per therm
Next 90,000 therms per month ..... .050 per therm
Over 100,000 therms per month .... .045 per therm

Corrected to typical monthly gas bills, the above rates will give:

Monthly Consumption		Net Bill	
Therms	*Mcf*	*$*	*Aver. per therm*
5,000	500	561.19 min.	11.22¢
6,000	600	616.19	10.27
7,000	700	671.19	9.59
8,000	800	726.19	9.08
9,000	900	781.19	8.68
10,000	1,000	836.19	8.36
15,000	1,500	1,086.19	7.24
20,000	2,000	1,336.19	6.68
30,000	3,000	1,836.19	6.12
40,000	4,000	2,336.19	5.84
50,000	5,000	2,836.19	5.67
100,000	10,000	5,336.19	5.34

The above rates should be attractive enough to draw the industrial consumers desired by the utility company and at the same time bring in gas revenues in considerable excess of the cost of the gas. If we assume that the average industrial consumer on the interruptible rate would use 3 MMcf per month, then the gross profit to the utility would be 31.2¢ per Mcf of 1,000 Btu gas or more than 100% on the cost of the gas. If we put it in another way, and apply the 31.2¢ gross profit to the estimated annual sale of 100 MMcf of interruptible rate gas by the theoretical gas company considered before, this interruptible business would account for $31,200.00 gross profit per year.

That kind of income cannot be considered lightly and it may be the difference between a sound operating economy and one of just mediocre return on the investment of the owners of the company.

Illustrative charts

As graphic illustrations of the seriousness of the demand created by domestic heating loads, and also to show the value of the interruptible industrial gas rates, the author has prepared two charts:

Chart No. 1 This chart lists the degree-days, by day, for Fitchburg, Mass., and it will be quite similar to other New England areas. The chart was taken from the *average* degree-days furnished by the Weather Bureau and does not show the year-to-year high-peaks. At the left of the chart are the number of degree-days and the temperature-degree corresponding to various lines of the chart. At the right are the cubic feet of gas that would be consumed in from one degree-day to the maximum number shown. This is per MMcf of annual heating load. From this chart, any company can select any degree-day shown and determine its load on that day by multiplying the figure in the right hand column by the number of MMcf of its annual heating load.

Chart No. 2 This chart illustrates the several loads of the theoretical gas company used for earlier discussions. The loads listed are based on percentage of total load, while the heating load is based on the 95,000 Mcf annual load and the degree-days listed for Fitchburg, Mass. This chart will give a comparative picture of a typical gas company and will show in proper perspective the importance of having interruptible rate customers.

Conclusion

The previous paragraphs of this article would seem to illustrate very concretely:

1. The danger of an uncontrolled heating load, when gas is purchased on a high demand-type of rate.
2. The high cost of heating gas, when considered in the light of its actual annual cost.
3. The definite need and advantage of interruptible industrial rate consumers.
4. That the interruptible gas rates should be low enough to attract the gas loads desired, both in volume and type.

With all these factors considered, we take the liberty of rearranging Mr. Wrench's statement, quoted earlier, to read, "The salvation of gas companies buying gas on high demand rates lies in the proper application of interruptible industrial gas rates."

Engr Staff Changes at Pitts Group

A realignment of its engineering organization and staff has been placed in effect by the Pittsburgh Group Companies, Columbia Gas System. Designed to free the engineering department of all responsibilities except planning and design, the change consolidates related engineering activities in a new technical operations department.

Headed by H. R. Weitzel, formerly superintendent of compressor stations, the new department includes the civil engineering, communications, and gas measurement sections. Section heads within the new department include J. A. Loudon, chief civil engineer; D. K. Ruth, communications engineer; R. L. Welch, supervisor of gas measurement, and H. W. Goodrich, office manager.

A. B. Lauderbaugh, chief engineer, continues as head of the engineering department. Among his new aides are C. B. Heist, senior gas engineer, and F. E. Costanzo, corrosion engineer.

G. G. Dormer, formerly assistant chief engineer, has been named assistant superintendent of compressor stations to replace Mr. Weitzel.

Assigned to the transmission department as transmission corrosion engineer was N. P. Peifer. P. N. Kuzmich has been assigned to the distribution department as distribution corrosion engineer.

Anton Elected N J State Senator

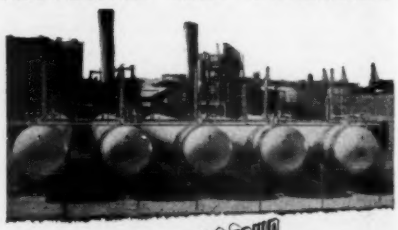
Mark Anton, president of Suburban Propane Gas Corp., N. J., was recently elected State Senator in New Jersey.

US Machine Div Sponsors Classes

The U.S. Machine Div., Stewart-Warner Corp., sponsored a series of regional classes on heat loss-gain calculations, late in 1953, and 300 dealers attended the 15 two-day schools which were conducted by Phil C. Kosch, manager of Winkler Training Institute, Ind., assisted by district sales managers.

Earlier in the year 400 dealers completed two-week courses in product and sales training at Winkler Institute. The training is free, and the company pays part of the trainee's travel and hotel expenses. Advance registrations indicate that the institute will break attendance records during 1954.

NATURAL GAS STANDBY



BY DRAKETOWN ®

This packaged propane plant designed, engineered and built by Draketown, provides a completely interchangeable fuel for natural gas.

Draketown can design and build one for you, *within your budget*, to take over all or part of your load at the turn of a valve.

STANDBY
AUGMENTATION
100% TOWN OR PLANT SUPPLY

Serving utility and industry for over thirty years

DRAKE & TOWNSEND
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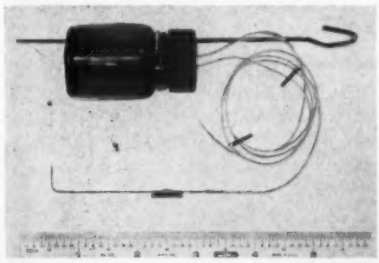
Consulting • Design • Engineering • Construction
11 WEST 42ND STREET • NEW YORK 36, N. Y.

NEW EQUIPMENT

Meter pen

For use on recording instruments and meters, this meter pen is said to reduce re-inking practices and to record for periods



up to a year with only one filling. Pulsating flow, rapid pen movement and atmospheric fluctuations have no effect, the manufacturer reports, and the chances for errors through unrecorded intervals are eliminated. Non-clogging, made of stainless steel, the pens offer a continuous supply of ink that is assured by capillary feed upward through a flexible plastic tube connected to a ½ oz. reservoir. The reservoir, suspended inside the recorder case, reportedly protects the ink from dust and atmospheric contamination and holds up to a year's supply. Available in various types for all standard recording instruments, the pens may be mounted quickly on installed meters.

Canon Meter Pens. American Meter Co., Erie, Pa.

Aluminum gas meter

A lightweight die-cast aluminum gas meter with a rated capacity of 415 cf/hr, this new unit weighs only 20 lbs. as com-

pared with the manufacturer's cast iron meters of comparable capacity, which weigh 62 lbs. The new meter has a single sealing flange between cover and body, and its valve plate is completely enclosed within the case. It also features oil-impregnated powdered metal bearings. Measuring 14¾" high, 11⅛" wide and 9⅜" deep, the unit has 7" spud centers, roll type diaphragms and four chamber design D slide valves with duplex tangent adjustment. Another feature of the meter is said to be its increased resistance to atmospheric corrosion.

Aluminum Gas Meter 415. Rockwell Mfg. Co., 400 No. Lexington Ave., Pittsburgh 8, Pa.

Pipe leak clamp

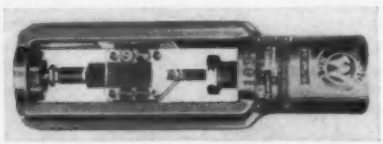
A cast-iron fitting to seal pipe leaks, this unit is made in two parts joined by four screws and is designed to enclose the leak

within captive Neoprene gaskets when the screws are tightened around the pipe. The fitting itself is said to exert no pressure on the leak or the weakened area around it. Since all contact of the device with pipes and fittings are on Neoprene, the resulting joint will withstand intense vibration the manufacturer states. The clamp is tested safe at pressures up to 150 psi. Two types of clamps, one for repairing pipe to elbow or T joints, the other for leaks in a straight section, are available in a variety of sizes to fit most standard pipe.

Elbow and Straight Bel Connector. Holoal Mfg. Corp., P.O. Box 95, Bellerose 26, N. Y.

Regulating valve

Closer regulation of fluid flow is made possible through the use of this new development in regulating valve design the



manufacturer reports. Available in all types of NGE Wilgus regulating valves, the unit is a gear train working at a ratio of 2:1, giving twice the stroke at the inner valve as at the diaphragm. Fluids, gas vapors or liquids which are to be maintained automatically at a desired pressure within a close limit can be maintained at half the variation due to the unit's action of doubling the presure effect. Valves energized by pilot instruments responding to pressure or temperature changes in the system, respond twice as fast it is said.

The Thomas Magna-Stroke. Natural Gas Equipment Inc., 190 E. Glenarm St., Pasadena 2, Cal.

Fluorescent lighting fixture

Designed for use in areas with explosive gases or combustible dusts and where safe lighting is required, this new type explosion-proof and dust-tight fluorescent lighting fixture is arranged with each fluorescent tube housed in an individual tube of heat-resisting glass. The fixture may be spaced end-to-end with other units, for continuous illumination. Tube ends are reversed tapered and sealed into cast aluminum housings which also contain the lamp receptacles. For end-to-end positioning, a link member that is part of the supporting assembly allows the relamping end of the fixture to be lowered several inches for access without interference with adjacent fixtures. Tools are not needed when the user desires to release the lamp assembly. The fixture is available for straight pendant mounting but special fittings for 45° mounting are also available.

EVF Fluorescent Lighting Fixture. Crouse-Hinds Co., Syracuse 10, N. Y.

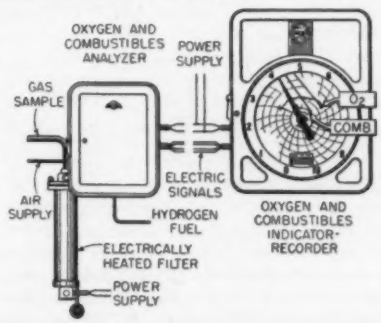
Gas-engine-driven compressor

By applying turbocharging in the development of this new 2,000 hp gas engine driven compressor, the manufacturer reports that a 2,000 hp four-cycle unit has been made available which is compact in size and economical in performance. The crankshaft design, with compound crankpins, contributes to the weight and size reduction. Turbocharging, as applied to the new unit, is a combination of scavenging and supercharging by means of an exhaust-turbine-driven centrifugal blower. At the end of the exhaust stroke and beginning of the intake stroke, inlet and exhaust valves are open, permitting air from the blower to sweep through the top cylinder space, purging spent gases and cooling piston, valves and cylinder. When the exhaust closes for the remainder of the intake stroke, the cylinder is filled with compressed air at about 4 psi. The unit is provided with 2 Elliot turbochargers, each driven by the exhaust gases from the adjacent 6 power cylinders. Both blowers discharge into a common air intake manifold. The blower speed is proportional to the fuel consumed, making it self-regulating at all speeds and loads. The blower starts automatically when the engine begins to operate. Compression ratio of the engine is 6.1, resulting in a compression pressure of 225 psi and a firing pressure of 600 psi at 2,000 hp. The fuel rate is 7,600 Btu/bhphr at full load, according to the manufacturer.

Type 412 KVS, Turbocharged Gas Engine Driven Compressor. Ingersoll-Rand Co., 11 Broadway, New York 4.

Oxygen and combustibles analyzer

Operating information on combustion performance is provided through the use of this combination analyzer and the com-



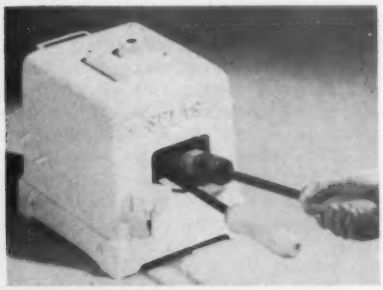
pany reports that it can act as a safety guide to prevent the lighting off of unpurged, gas-fired combustion chambers. Analyses of $\%0_2$, an index of excess air,

and % combustible, an index of fuel-air mixing performance, are said to be offered for the first time in a single unit. The gas analyzer and its recorder indicate or automatically control the necessary adjustments required to maintain combustion efficiency within combustion equipment limitations. Minimum range, 0-5%, maximum range, 0.25%. The unit uses compressed air and H_2 for catalytic combustion, and noble metal filaments with thermal conductivity compensators are part of null balance bridges. The analyzer is reportedly accurate within $\pm 0.25\%$ by volume of O_2 and combustibles contents in sample.

Bailey Oxygen and Combustibles Analyzer. Bailey Meter Co., 1050 Ivanhoe Rd., Cleveland 10.

Soldering furnace

This gas-fired soldering furnace, using a radiant burner, is said to be capable of heating within 8 minutes, two 4-lb. irons



from room temperature to 900° F, or a single 4-lb. iron to 1,200° F, with a heat input of 9,100 Btu/hr. The manufacturer reports that the burner is located so that mechanical shock and flux corrosion damages are kept to a minimum, and that the refractory hearth may be easily removed and cleaned. Heating is said to be done without flame impingement, yet the soldering copper is surrounded by fully-burned gases which virtually eliminate oxidation and burning of the copper, enabling it to retain a bright, tinned working surface.

Selas Soldering Furnace. Selas Corporation of America, Erie Ave. and D St., Philadelphia 34, Pa.

Pipe joint compound

An insoluble pipe joint compound that seals joints, fittings and all threaded connections, this compound reportedly provides permanent protection against gas leaks. Because it is non-hardening the manufacturer states it will not crack when temperature changes cause expansion and contraction. It is reportedly not affected by gases, corrosives, petroleum products and most acids, and is easy to apply. It is available in 1, 5, 15, and 28 lb. cans.

Plastic Lead Seal. Crane Packing Co., Chicago, Ill.

Aluminum paint

A new aluminum paint, reportedly requiring no prime coat, has been added to the manufacturer's line of paint products. A one coat aluminum paint, the new product features a built-in rust inhibitor. Said to provide a brilliant appearance and good coverage, it is designed to give economical protection to outdoor surfaces, the manufacturer reports. It will be marketed through the company's distributors.

Dixon One Coat Aluminum Paint. Joseph Dixon Crucible Co., Wayne & Monmouth Sts., Jersey City 3, N. J.

Aluminum meter

This meter is said to be an aluminum version of the manufacturer's standard No. 1 gas meter. Weighing 22 lbs. as compared with the standard meter, which weighs 45 lbs., the new meter has been designed to offer more ease in handling and setting, and greater resistance to weather and shock, the company reports. It has a pressure cast aluminum body; tested at 10 psi, it has a rated capacity of 5 psi. Available with offset swivels for 10 light meter bar installations, the meter has a maximum capacity of 275 cf/hr, at ½" pressure drop with 0.60 specific gravity gas.

Aluminum Meter. Rockwell Mfg. Co., 400 No. Lexington Ave., Pittsburgh 8, Pa.

First aid kit

Features of this newly designed first aid kit include a special color-identification system for packaged materials, and an assur-

ance that all first-aid items from inhalants to bandages are rigidly controlled to pharmaceutical standards by a control procedure whereby every unit carries an identifying key number. Individual unit packages feature simplified, fully illustrated instructions in large, clear type. Labels of each antiseptic are printed in a different color, pure ammonia is used for inhalants, the vials being covered with a special fabric that turns brown in case of leaks, and applicator tips are of gauze so that no loose fibers can cling to a wound. The kit may be wall-mounted, a stop-hinge on the lid holding it at a right angle to form a shelf. A rubber gasket set in the top of the base provides a tight seal when the lid is closed offering protection against dust and moisture. Available in 10-, 16-, 24- and 36-unit sizes.

Type D All-Weather First Aid Kit. Mine Safety Appliances Co., 201 No. Braddock Ave., Pittsburgh 8, Pa.

Portable compressor

A new 600 cfm diesel-powered portable compressor is available in both skid and 4-wheel trailer mounting styles. The compressor has 4 low pressure cylinders with 8" bore and 4" stroke, and 2 high pressure cylinders with 6⅝" bore and 4" stroke. Standard features include automatic compressor-engine controls; individually-finned, separately-replaceable cylinders; full force feed lubrication; cast aluminum crankcases; multi-port valves; automatic type steering; full spring suspension and double, built-in, full length tool boxes. The 4-wheel trailer is 150" long, 75" wide and 95" high, with a net weight of 9,300 lbs. Skid dimensions are 150" by 63" by 69" with a net weight of 8,700 lbs.

Davey Super Chief 600. Davey Compressor Co., Kent, O.

Seal valve and bibb reseater

The manufacturer's seal valve and bibb reseater is now available in a newly designed black and green, fitted styrene case which

provides individual wells and grooves, with part numbers stamped in each, for every item in the kit. It is designed to house either the 2" size tool for ½" to 2" valves and ¼" to ¾" bibbs, or the 3" size for ½" to 3" valves and ¼" to ¾" bibbs. The company reports that bar type cutters operating under screw feed, leave worn scored seats smooth, level, absolutely tight, and that low spots on the seats, grooves, uneven places, have no effect. The cutter rotates on a level plane and is advanced by slight turns of the feed screw until the job is done. The tool provides a full range of guide pilots, cutters, spindles, tapered bushings plus hand wheel and bit brace.

Skinner-Seal Valve and Bibb Reseater. M. B. Skinner Co., South Bend, Ind.

Combustible gas alarm

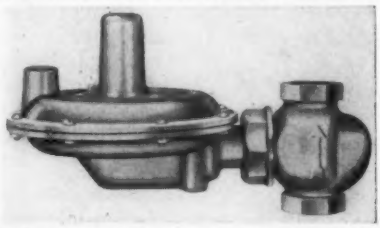
Sequential sampling of potentially explosive atmospheres from 6 separate locations is performed by the manufacturer's indicating type combustible gas alarm system, with model variations available to permit sampling from any number of locations from 2 to 8. The unit draws samples continuously through metallic tubing and analyzes them on a 30-second cycle. Indication of the presence of combustible gas is provided on a panel-mounted indicating instrument, while the sample line currently being analyzed is indicated by a series of pilot lights on the front panel. If the combustible gas reaches a pre-selected level the instrument stops cycling automatically, shows a warning light, and energizes an external circuit to actuate a remote warning alarm. The unit is housed in a free-standing steel cabinet, for complete enclosure, measuring 22" wide, 18" deep and 68" high. Operation is from 115 volts AC, 50-60 cycles. Other features include: a push-button air-test control; a rotary positive displacement air pump to maintain a vacuum adequate to permit the use of relatively small sample lines; and a separate voltage adjustment for the sensing element

filament to establish optimum filament temperature for the particular gas to be detected.

J-W Model RV-6 Combustible Gas Alarm. Johnson-Williams, Ltd., 2669 Third St., Palo Alto, Cal.

Regulator

A new series of regulators for house or service low pressure installations, the regulators feature ease of installation and mounting in any position through incorporation of a union type removable pipe section. The regulators are particularly suited to applications where distribution systems are converted from low to high pressures. The regulator may be quickly installed in close quarters where space restrictions are encountered in existing meter piping, the company reports, with the need for accurate alignment with the diaphragm section. The units are designed to provide precise regulation over a wide range of flows and supply pressures. Maximum inlet pressure is 75 psi. A large area vent is offered for emergency gas escape in case of excess pressure. An optional built-in mechanical relief valve is set to relieve at approximately 14″ of water. The series of regulators is furnished with ¾″, 1″ and 1¼″ standard pipe thread connections.



Series 1400 Reliance Regulators. American Meter Co., Erie, Pa.

Tubing test plug

These test plugs, for use where it is desirable to shut off the end of a tube temporarily, are said to be especially convenient for use in instrumentation, radiant heat, refrigeration, LP gas and similar installations. The plug is inserted in the tube end and the wing nut is tightened, expanding the synthetic rubber portion of the plug to seal the tube. It is reported that these plugs will hold pressures up to 100 lbs. and can be used on all liquid or gas tubing lines except those where the liquid or gas would deteriorate synthetic rubber. The plugs are available in 5 sizes, ¼″, ⅜″, ½″, ⅝″ and ¾″, o. d.

No. 140-F Tubing Test Plug. The Imperial Brass Mfg. Co., 1200 W. Harrison St., Chicago 7.

Non-return valve operator

Designed to make a hydraulically operated non-return or check valve of a simple butterfly valve, this non-return valve operator is an adaptation of the manufacturer's jet pipe hydraulic regulator. The regulator operates the non-return valve to maintain a constant low differential pressure across the valve. A reversal of pressure causes the valve to close. According to the company, the operator has a high power output and will control large tight-closing valves. Counterweights, springs and dashpots are not necessary, the manufacturer reports. The opener permits use of a simple internal design valve, free from pockets that can accumulate dirt and tar.

Askania Non-Return Valve Operator. Askania Regulator Co., 240 E. Ontario St., Chicago 11.

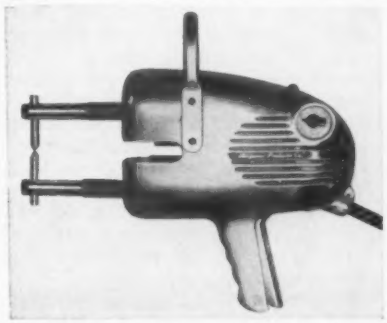
Reversal system, regenerative furnaces

For open hearths, regenerative soaking pits and glass tanks, this packaged automatic reversal system features a compact panel in which the reversal controls are factory-assembled. Reversal can be initialed automatically by elapsed time or checker temperature, or semi-automatically by pushbutton, the manufacturer reports. The system is said to provide unvarying reversal sequence, with all steps electrically interlocked for safety. Panel lights indicate firing conditions and reversal sequence.

Askania Automatic Reversal System for Regenerative Furnaces. Askania Regulator Co., 240 E. Ontario St., Chicago 11.

Portable spot welder

Featuring an electronic timing control, enclosed within the unit, which offers a timing cycle from 1/60 of a second to a full second, this portable spot welder will weld most alloys of aluminum sheets, steel, mild and stainless, also galvanized and cadmium plated. Its output is over 10 kva, the company states. With pistol grip for easy operation and handling, a stand is also available into which the welder can be mounted and used as a foot operated floor model. Weighing 26 lbs., adapters for water cooling permit conversion into a water cooled spot welder. The unit will weld metals of a 3/16″ combined thickness. Operation is over 12,000 amps at point of weld. Up to 1,000 lbs. electrode pressure can be had by adjustment of tips with little hand pressure.



Ampower Portable Spot Welder, Model 5201. Ampower Products Co., 5737 W. 87 St., Oak Lawn, Ill.

Industrial fuel burning system

This completely factory-coordinated industrial fuel burning system is said to make available a packaged system for the conversion of large boilers to oil or gas firing. Built around the manufacturer's burner, the system includes proper controls mounted in panels and wired to terminal strips for connection, windbox assembly and refractory ring, fuel oil heaters and trim. The burners, oil or oil/gas-fired, are available in sizes from 18 to 400 hp. A factory prefabricated unit of heavy boiler plate, the windbox assembly reportedly reduces the combustion chamber and simplifies its construction by eliminating checkwork and ring walls. Other elements of the system include: tank heater for recovering hot oil being returned by burner and preheating oil in tank, fuel oil pump sets, fuel oil heater assemblies of either below-the-water-line or steam type, and trim assembly of valves and gauges for suction and discharge piping at burner. The control panels include five types; main control panel for primary burner and flame control, induced draft fan panel for control of any size or make of induced draft fan, master and draft controls, and stock thermometer and draft indicator panel.

York-Shipley F/C Industrial Fuel Burning System. York-Shipley, Inc., York, Pa.

Midget solenoid valve

These midget solenoid valves are a series of magnetic stop valves designed for use with all types of gases or fluids. The valves are said to operate in any position and to feature positive shut off, low current consumption, optional time-delay, and adjustable by-pass and main flow. One of the valves is designed for use in domestic oil burners and features a built-in, time-delay action which prevents immediate opening of the valve until the oil burner motor gains full running speed. Another stop valve in the series is for use in both domestic and commercial oil burner installations, and is of the manual reset type. This valve fails safe on current failure or unsatisfactory voltage conditions, and must be manually reset after the trouble is corrected.

Midget Solenoid Valves. General Controls Co., Glendale, Cal.

Gas burner nozzle

A new 8-inch size gas burner nozzle has been added to the manufacturer's line of nozzles for open port firing on industrial furnaces, kilns, driers, ovens, air heaters, boilers, immersion tubes and kettles. The nozzles are recommended by the company for blast firing of air-gas mixtures into open ports of furnaces, or for firing into the open without a combustion chamber, and where a small amount of excess air induced around the nozzle is allowable. The new 8-inch size offers a gas burning capacity up to 6,200,000 Btu/hr with 6″ w.c. mixture pressure. The new nozzle supplements the previous line of 10 other sizes of nozzles from ½″ through 6″, inclusive.

Retain-A-Flame Gas Burner Nozzle. Hauck Mfg. Co., 124-136 Tenth St., Brooklyn 15, N. Y.

Automatic doors

A new explosion-proof control switch is said to permit the installation of the manufacturer's doors wherever certain hazardous conditions exist. The new switch is enclosed in a cast iron housing meeting NEMA requirements for explosive gas atmospheres including locations where natural gas vapors may be present. Light pressure opens the doors, and they stay open while the user passes through. The control can be located for hand use, at elbow height or for tip-toe operation. The explosion-proof switch can be used with all types of the manufacturers door operators; for single, double, and bi-fold swinging doors as well as single and bi-parting sliding doors.

Stanley Magic Door. Magic Door Div., The Stanley Works, 195 Lake St., New Britain, Conn.

1954 Could Be Made The Big Opportunity For The Gas Industry

(Continued from page 15)

natural gas now totals more than 394,000 miles, or enough to girdle the world more than 16 times. With the distribution systems of manufactured and mixed gas utility companies totaling more than 50,000 miles, the gas industry's pipeline mileage constitutes one of the greatest transportation systems in the nation.

"The gas industry will spend nearly $2½ billion before the end of 1956 for further expansion of the entire natural gas industry. While more than one-half this amount will be spent in building new lines, looping present lines or for additional compressor station horsepower, an increasing amount each year is being earmarked for increasing underground storage facilities.

"At the end of 1952 there were 151 underground storage pools in operation in the United States, with a total estimated capacity of 1,290 billion cubic feet. During 1953 there were 17 additional underground storage pools under construction which would add about 281,500,000 cubic feet of capacity to the underground storage for the nation. . . . The gas industry estimates that more than $134,000,000 will be spent on underground storage facilities from 1953 through 1956.

"During the past year natural gas in important volume was delivered to Massachusetts, New Hampshire and Connecticut, augmenting supplies in such New England cities as Boston, New Haven and Hartford. Rhode Island received natural gas for the first time last year. A proposed extension of a present line would bring natural gas to Maine. Nevada also may receive natural gas for the first time in 1953.

"The Pacific Northwest is the only large region not served with natural gas. At least two proposals have been made for serving Washington, Oregon and Idaho.

"Proved recoverable reserves of natural gas continue to be more than ample to supply this constantly increasing demand. The American Gas Association's committee on reserves estimated that on December 31, 1952, proved recoverable reserves of natural gas were 199.7 trillion cubic feet. This was an increase of 5.9 trillion cubic feet over estimated reserves a year earlier. Experts have estimated that the Nation's actual reserves of natural gas are more than 500 trillion cubic feet.

"Looking ahead to the distant future, the gas industry has been developing methods of augmenting supplies of natural gas through the manufacturing of a gas of high heat content that can be used as a substitute for natural gas. Coal appears to offer the best possible source for producing such a high Btu gas today. Reserves of bituminous coal, the best type of solid fuel for gasification, are tremendous. Vast fields of coal reserves are located near existing transmission and distribution systems, facilitating the problem of transporting such manufactured gas to markets.

"Experimental work looking toward the manufacture of a high Btu gas from coal has been done and still is being carried on by many interested organizations. Research work on this project is part of the program of the AGA gas production research committees. . . . The gas industry will be ready to avail itself of such developments, if and when the need arises.

"The gas industry added 1,090,000 new househeating customers to its lines during the 1952-1953 heating season, according to estimates submitted by gas utility companies to AGA. This brought the total of residential gas heating customers to about 11,750,000, equivalent to about 48% of all residential gas customers.

"During the year, nearly $750,000 were spent on research projects designed to improve the production and utilization of gas. These projects range from reviewing methods of making high Btu gas to creating new designs for ultra-modern automatic gas ranges.

"Promotional campaigns are planned; material designed for use by gas utility companies, appliance manufacturers and dealers. Such campaigns are augmented by national advertising by AGA and appliance manufacturers. Local utilities and dealers further supplement such national campaigns by promotional efforts through newspaper, radio, television and billboard advertising. As a result, many millions of dollars are invested each year in telling the story of gas and gas appliances to consumers throughout the nation.

"AGA and the Gas Appliance Manufacturers Association, early in 1953, embarked on a joint program of action to strengthen the competitive position of gas as a major domestic fuel.

"In 10 pilot cities, which are representative of all types of gas utility markets, all of the sales and service objectives of the Gas Industry Development Program are being tested. Results of these tests are being researched by an outstanding marketing counsel and all member companies of AGA will be informed as to the problems and progress made on the program. It is fully expected that this program will accentuate the present strong position of gas and gas appliances and their contribution to modern living.

"Our natural gas lines continue to extend into new territories and to augment the supplies in areas now served with this popular fuel. A favorable regulatory climate holds encouragement for fair rates of return on the billions of dollars invested in gas properties. This in turn, means increased investor confidence and facilitates raising necessary capital for the extended gas industry construction program still ahead. Competition still will be keen, but an alerted gas industry is ready to devote all of its talents and resources to bring the maximum in public service to its customers. With all of these favorable factors at hand, the future of the gas industry is most promising.

Sheldon Coleman says:

"Certainly," says Sheldon Coleman, president, The Coleman Company, and president, Gas Appliance Manufacturers Association, "the industry has good reason to expect substantially increased volume in 1954 from the resumption by many gas utilities of active merchandising cooperation with gas appliance dealers. This is a function many gas companies had to relinquish a decade ago to concentrate on expansion of their fuel distribution systems.

Sheldon Coleman

"The gas appliance industry has been doing a pretty thorough job of upsetting 'economics.'

"To hear many of our leading economists tell it, the lines on our sales graphs should long since have begun to dive. Instead, the charts show that our industry as a whole has made good its forecast of a banner year in 1953, and now we have no qualms whatever about predicting even greater volume in the year ahead.

"Four quick reasons for this enthusiasm are, of course, projected new-home construction, mass remodeling of older homes, rapid expansion of the Nation's natural gas system, and continued conversion from competitive fuels.

"Naturally, all appliance and home furnishings producers look to the building of new homes—which may come close to 1,000,000 in 1954—as an obvious source of new business. But it is significant that the great majority of gas appliance sales in 1953 were to homes undergoing a complete or partial remodeling.

"The drive against obsolescence in kitchens, laundries and heating of more than 22,000,000 American homes which have passed the age of 30 will not only provide the principal market for gas appliances in 1954 (and for at least 5 years thereafter) but should give considerable impetus to all related industries.

"Sales of domestic gas appliances in all classifications showed a substantial increase in 1953 over the preceding year. Househeating equipment of all types, including central heating systems and individual room heaters, totaled approximately 3,070,000 units, an increase of 6.1%.

"Domestic gas range shipments came to about 2,250,000 units, up 3.4%; gas water heaters, 2,200,000 units, up 15.1%; and a greater rate of increase applied to shipments of gas clothes dryers and on-the-premises gas incinerators, both comparatively new members of the gas appliance 'family.'

"In 1940 gas utilities made a majority of the gas appliance sales. By 1952 the situation was reversed, with factory distributors and dealers doing most of the appliance business. The utilities' return to aggressive sales cooperation will offer a powerful stimulant to the entire industry.

"Rapid development of the air conditioning industry will benefit manufacturers of gas central heating equipment because installation of the heating ductwork often

provides a ready-made system of cool-air distribution for summer comfort.

"Then there is a new potential source of revenue for gas appliance producers in the intensification of municipal and state drives against air pollution. This may lead to further restrictions on the use of coal for heating and other household functions and encourage official recognition of gas as a clean-burning fuel.

"Other factors that bear directly on our future are:

"1. The gas industry's technical cooperation with builders and architects to insure adequate piping of new homes and other structures for all types of gas equipment installation.

"2. Continued dominance of gas appliances as the tools of domestic science and home economics instruction in the nation's public and private schools and colleges.

"3. Successful self-government by the gas industry in matters of safety and efficient operation of appliances . . .

"In addition to the domestic replacement market, the industry looks optimistically to the start in 1954 of a move to modernize hotels, public eating places and institutions where gas already leads the field as the commercial cooking, heating and water-heating fuel.

"According to reports from GAMA's industrial gas equipment division, the new year will see a record total of industries relying exclusively on gas for processes requiring precisely-controlled heat treatment. Already there are 2,600 different types of such equipment being used in more than 25,000 industrial operations.

"In short, it requires no statistical sleight-of-hand to put gas and gas-operated equipment at the head of the parade of U. S. growth-industries.

Can a Gas Company Be Compelled to Lower Rates?

"When and under what circumstances of evidence can a gas company be compelled to lower its gas rates? Is the same law applicable to cases involving increased rates?"

Various higher courts have held that an important and dependable standard for determining the validity of present gas rates is the present cost of reproduction, of property valuations, less depreciation. For rate-making purposes only such property that is useful for the convenience of the public may be considered as the company's actual legal assets. Therefore, in litigations involving rates, the court will decide whether the revenue capable of being earned by the present established rates yields a reasonable net income. This decision must be based upon testimony presented by the gas company, the public service commission and gas consumers. See Virginia, 290 U. S. 190.

A rate which is not certainly confiscatory, by reason of the net yield being somewhat above the point of confiscation, and although it is not a just rate, under certain circumstances, may be valid. See Portsmouth v. Public Utilities Commission, 140 N. E. 604.

Generally speaking, in a litigation involving the right of a public utility commission to compel a gas company to lower its rates, the validity or constitutionality of the state laws which authorize the commission to function is an important consideration. According to a late higher court decision, this rule of law is not applicable when the public utility commission endeavors to compel the gas company to *increase* its rates.

In Public Service Commission v. Great Northern Utilities Co., 284 Pac. 772, it was disclosed that an established gas company had adopted rates and, later, a rival gas company commenced serving a part of the city at considerably lower rates. Soon afterward, the older company changed its rates to a still lower level. The new company complained to the commission and, after a hearing, the commission ordered the older company to file its schedule fixing its rates the same as those of its rival.

The right of the commission to compel the gas company to increase its rates was an important consideration. It was contended that enforcement of the order by the commission to increase rates depended upon its authority derived from state laws.

The court refused to consider this argument, and said, "In the ordinary action challenging an order requiring a utility to lower its rates on the ground that the order is unjust and unreasonable, the only question presented would be as to the constitutionality of the statutes authorizing such enforcement. Here, the order is not that the utility should lower its rates, but that it should *raise* its rates."

—L. T. P.

PCGA Convention Site Is Vancouver

Pacific Coast Gas Association has announced its changing of the 1954 convention site from Victoria to Vancouver, British Columbia. An unprecedented early demand for reservations indicated that a serious overflow was in prospect and W. C. Mainwaring, president, made the change to Vancouver after contacting the Association's board of directors. The same dates, September 8, 9 and 10, are available for the convention, which will be held in the Vancouver and Georgia Hotels.

New Sendout Peak for Calif System

Natural gas deliveries to customers of the combined Southern California Gas Co. and Southern Counties Gas Co. systems reached an all-time high on December 4, according to preliminary system totals recently announced. The new daily peak is listed at 1,388 billion cubic feet, surpassing the previous record sendout of 1,358 billion cubic feet made in February, 1953.

The daily peak record was attributed to the uncommonly severe weather which struck the Los Angeles metropolitan area. High winds followed by a rainstorm carried a chill that lasted for many hours.

Robertshaw-Fulton Expanding Plant

Ground was broken last month for a $500,000 plant expansion at the Anaheim Div. of Robertshaw-Fulton Controls Co. in suburban Los Angeles. One of the company's seven manufacturing divisions, it is the only one devoted entirely to defense production and is engaged in the manufacture of electronic, electro-mechanical, hydraulic and pneumatic components for aircraft, guided missiles and fire-control systems.

The new facilities will include two research and development laboratories, an auditorium, offices, and an employee cafeteria.

NEW BULLETINS

ECLIPSE LINE BURNERS. Retention type burners designed for gas fired applications where heat must be distributed over a wide area by a continuous flame which can be lighted from one point, are described in this bulletin. According to the manufacturer the burners can be used in non-recirculating air heating systems where temperatures do not exceed 1,000 F. The burners may be installed to fire any direction; horizontally, vertically or downward. The bulletin contains information on burner selection, mixer and pilot selection, and temperature control.

Bulletin H-17. Pp. 4. Eclipse Fuel Engineering Co., Rockford, Ill.

PYROMETER SUPPLIES. The manufacturer's complete line of pyrometer supplies are described in this thoroughly illustrated bulletin. All general thermocouple assemblies and components are listed, as well as many special purpose items. Sections of the bulletin are devoted to: general information; base metal thermocouples; small mass, sensitive thermocouples; noble metal, and special purpose, thermocouples; and thermocouple components. Several pages on selection, care, and application of thermocouples round out the bulletin.

Bulletin 100-5-10M. Pp. 48. Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne and Windrim Aves., Philadelphia 44.

ELECTRONIC CONTROLLERS. The company's new line of free-vane electronic controllers, latest additions to a series, are described in this bulletin. The instruments are available as indicating or recording controllers for temperature, pressure, flow, liquid level, humidity, and time program. Complete information on the frequency modulation principle of the control unit, plus data on the combinations of indicators or recording pens and control units available, examples of applications, and complete engineering specifications are contained in the fully illustrated bulletin.

Bulletin B226. Pp. 16. The Bristol Co., Waterbury 20, Conn.

GAS INDUSTRY CALENDAR

January

14-21 National housewares and home appliance exhibits, Navy Pier, Chicago.
17-21 National Association of Home Builders convention and exposition, Chicago.
18-20 AGA home service workshop, Deshler Hilton Hotel, Columbus, O.

February

8-12 Western winter radio-television & appliance market, Western Merchandise Mart, San Francisco.

March

4-5 AGA transmission and storage conference, Jung Hotel, New Orleans.
15-17 Mid-West Gas Association, Fort Des Moines Hotel, Des Moines, Iowa.
25-26 Oklahoma Utilities Association annual convention, Biltmore Hotel, Oklahoma City.
25-26 New England Gas Association, Hotel Statler, Boston.

April

12-14 AGA Sales Conference on Industrial and Commercial Gas, Edgewater Beach Hotel, Chicago.
13-15 Southwestern gas measurement short course, University of Oklahoma, Norman, Okla.
20-23 AGA Distribution, Motor Vehicles and Corrosion Conference, Mount Royal Hotel, Montreal, Canada.
22-23 Indiana Gas Association, annual meeting, French Lick Springs Hotel, Chicago.
26-28 Mid-West Regional Sales Conference, Edgewater Beach Hotel, Chicago.
26-28 The 1954 annual convention, Southern Gas Association, Houston.

May

10 (week) 35th Annual National Restaurant Convention and Exposition, Navy Pier, Chicago.
10 (week) AGA commercial gas school, Chicago.
10-13 LPGA Annual Convention, Conrad Hilton Hotel, Chicago.
19-21 GAMA annual meeting, The Drake, Chicago.
24-26 AGA Production and Chemical Conference, Wm. Penn Hotel, Pittsburgh.
27-28 Natural Gas and Petroleum Association of Canada, Prince Edward Hotel, Windsor, Ontario, Canada.

June

20-24 Canadian Gas Association, Banff Springs Hotel, Banff, Alberta, Canada.
28-29 Michigan Gas Association, Grand Hotel, Mackinac Island, Mich.

July

12-16 National housewares and home appliance exhibits, Auditorium, Atlantic City, N. J.
19-23 Western summer radio-television and appliance market, Western Merchandise Mart, San Francisco.

September

8-10 Pacific Coast Gas Association, Vancouver and Georgia Hotels, Vancouver, British Columbia.
28-29 Texas Mid-Continent Oil and Gas Association, Baker Hotel, Dallas.

October

11-14 AGA annual convention, Atlantic City, N. J.
18-22 National Safety Council, Chicago.

November

1-5 National Metal Exposition, Chicago.
8-11 American Petroleum Institute, Conrad Hilton Hotel, Chicago.
28-December 3 The American Society of Mechanical Engineers, Statler Hotel, New York.

February, 1955

7-11 Western winter radio-television and appliance market, Western Merchandise Mart, San Francisco.

April, 1955

12-14 AGA sales conference on Industrial and commercial gas, Hotel Statler, Boston, Mass.
25-27 Mid-West regional gas sales conference, Edgewater Beach Hotel, Chicago.

May, 1955

9-13 National restaurant exposition, Navy Pier, Chicago.
16-18 Southern Gas Association, New Orleans, La.
23-25 GAMA annual meeting, Ambassador Hotel, Los Angeles.

June, 1955

5-9 Canadian Gas Association, annual meeting, General Brock Hotel, Niagara Falls, Ontario, Canada.

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